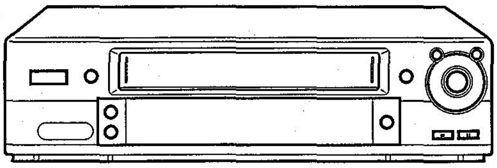
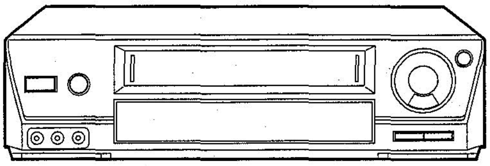
aiwa
SERVICE

HV-FX7750 LE
HV-FX5700 LE
HV-FX990 LE
HV-GX935 LE
HV-GX915 LE



HV-FX7750, FX5700



HV-FX990, GX935, GX915

SERVICE MANUAL

STEREO VIDEO CASSETTE RECORDER <7750/5700>
VIDEO CASSETTE RECORDER <990/935/915>

BASIC VIDEO MECHANISM
: D33K-4HF/PAL(6721R-0250B)<7750,5700>
: D33K-4HD/PAL(6721R-0230B)<990>
: D33K-2HD/PAL(6721R-0212A)<935,915>

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S/M Code No. 09-007-347-2R1

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SPECIFICATIONS

<HV-FX7750, FX5700, FX990>

Video recording system	Rotary 2 head helical scanning system
Video head	Double azimuth 4 heads
Tuner system	Frequency synthesized tuner
TV system	B/G, L/L' SECAM, B/G PAL
Video signal system	SECAM/MESECAM/PAL color signal, 625 lines, 50 fields
Usable cssettes	VHS video cassettes
Recording/playback time	PAL/SECAM/MESECAM SP: 5 hours max. with E-300 tape. LP: 10 hours max. with E-300 tape NTSC (Playback only) SP: 3 hours 30 minutes max. with T-210 tape LP: 7 hours max. with T-210 tape EP: 10 hours 30 minutes max. with T-210 tape
Tape speed	PAL/SECAM/MESECAM SP: 23.39 mm/s LP: 11.69 mm/s NTSC (Playback only) SP: 33.35 mm/s LP: 16.67 mm/s EP: 11.12 mm/s
Rewind time:	Approx. 3 min. with E-180 tspe
Channel coverage	VHF-low: C02 to C12, C13 to C20 UHF: C21 to C69 CATV: S01 to S41
Video input	0.5 - 2.0 Vp-p, 75 ohm, unbalanced
Video output	1.0 Vp-p, 75 ohm, unbalanced
Horizontal resolution	240 lines (SP)
Video S/N	43 dB (SP)
Audio track	3 tracks (Hi-Fi sound 2 tracks, Normal sound 1 track) <FX7750, FX5700> 1 track (Normal sound) <FX990>
Audio input	SCART: -6 dBs, 10 k ohm
Audio output	SCART: -6 dBs, less than 1 k ohm
Hi-Fi frequency response	20 Hz - 20 kHz <FX7750, FX5700>
Hi-Fi dynamic range	More than 87 dB (SP) <FX7750, FX5700>
Hi-Fi Wow & Flutter	Less than 0.01%(nominal) <FX7750, FX5700>
Operating temperature:	5 °C to 35 °C
Power requirements	200 - 240 V AC, 50 Hz
Power consumption	19 watts TYPE 2.1 watts (power save mode.)
Dimensions	360 (W) x 270 (D) x 94.5 (H) mm ($14^1/_4$ x $10^3/_4$ x $3^3/_4$ in.)
Weight	Approx. 3.5 kg (7.7 lbs.)

<HV-GX935, GX915>

Video recording system	Rotary 2 head helical scanning system
Video head	Double azimuth 2 heads
Tuner system	Frequency synthesized tuner
TV system	B/G, L/L' SECAM, B/G PAL
Video signal system	SECAM/MESECAM/PAL color signal, 625 lines, 50 fields
Usable cssettes	VHS video cassettes
Recording/playback time	PAL/SECAM/MESECAM 5 hours max. with E-300 tape. NTSC (Playback only) 3 hours 30 minutes max. with T-210 tape
Tape speed	PAL/SECAM/MESECAM 23.39 mm/s NTSC (Playback only) 33.35 mm/s
Rewind time:	Approx. 3 min. with E-180 tspe
Channel coverage	VHF-low: C02 to C12, C13 to C20 UHF: C21 to C69 CATV: S01 to S41
Video input	0.5 - 2.0 Vp-p, 75 ohm, unbalanced
Video output	1.0 Vp-p, 75 ohm, unbalanced
Horizontal resolution	240 lines
Video S/N	43 dB
Audio track	1 track (Normal sound)
Audio input	SCART: -6 dB, 10 k ohm RCA: -6 dB, 47 k ohm <GX935>
Audio output	SCART: -6 dB, less than 1 k ohm
Operating temperature:	5 °C to 35 °C
Power requirements	200 - 240 V AC, 50 Hz
Power consumption	16 watts TYPE 2.1 watts (power save mode.)
Dimensions	360 (W) x 270 (D) x 94.5 (H) mm ($14^1/_4$ x $10^3/_4$ x $3^3/_4$ in.)
Weight	Approx. 3.5 kg (7.7 lbs.)

- Design and specifications are subject to change without notice.

ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-35R-P00-54A		INSTRUCTION ASSY CBFA201S NFA1<91>
1	S8-35R-P00-54D		INSTRUCTION ASSY CBFA204S NFA1<93>
1	S8-35R-P00-54E		INSTRUCTION ASSY CBFA404S NFA1<99>
1	S8-35R-P00-54B		INSTRUCTION ASSY CBFA911NS NFA<57>
1	S8-35R-P00-54C		INSTRUCTION ASSY CBFA918NS NFA<77>
2	S7-11R-1P0-24G		REMOTE CONTROLLER ASSY N2<91>
2	S7-11R-1P0-24B		REMOTE CONTROLLER ASSY N2<93>
2	S7-11R-1P0-24A		REMOTE CONTROLLER ASSY N2(BFA9<99,77>
2	S7-11R-1P0-24H		REMOTE CONTROLLER ASSY N2(BFA9<57>
3	S8-610-33B-000		CABLE SET ASSY<57,77>
4	S8-615-05R-000		CABLE ASSY<57,77>
4	S8-615-05B-000		CABLE SET ASSY<91,93,99>
5	S8-610-45F-000		CABLE,COAXIAL 1.2M/M<57,77>
6	S5-640-18B-000		PLUG ASSY PHONO CORD<57,77>

TYPE	MODEL NAME	SUFFIX
<77>	HV-FX7750	LE
<57>	HV-FX5700	LE
<99>	HV-FX990	LE
<93>	HV-GX935	LE
<91>	HV-GX915	LE

DISASSEMBLY INSTRUCTIONS

1. Top Case Removal

1) Remove 4 screws holding the top case.

2. Panel Front Removal (see Fig. 1)

1) Release 7 tabs, and then remove the panel front.

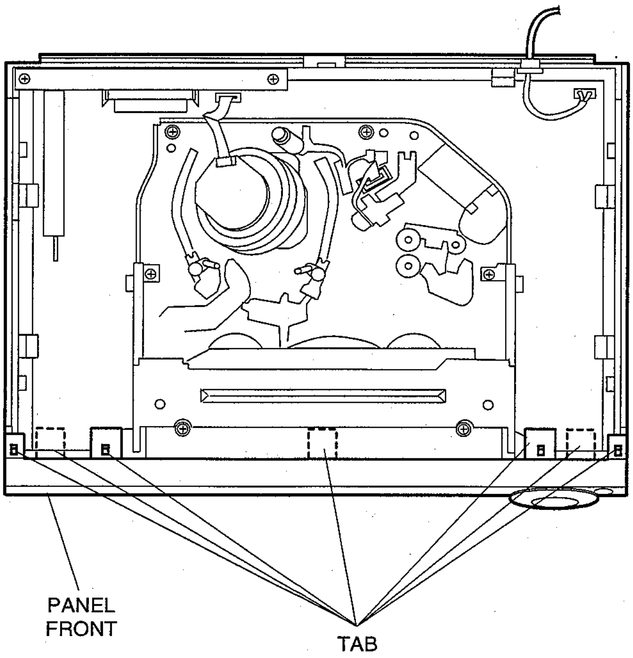

PANEL FRONT
TAB

Fig. 1

3. Key1 C.B. and Key2 C.B. Removal (see Fig. 2)

1) Release 2 tabs, and then remove Key2 C.B. from the connector (PKM02) in the direction of arrow ①.

2) Release the tab, and then remove Key1 C.B. from the connector (PKM01) in the direction of arrow ②.

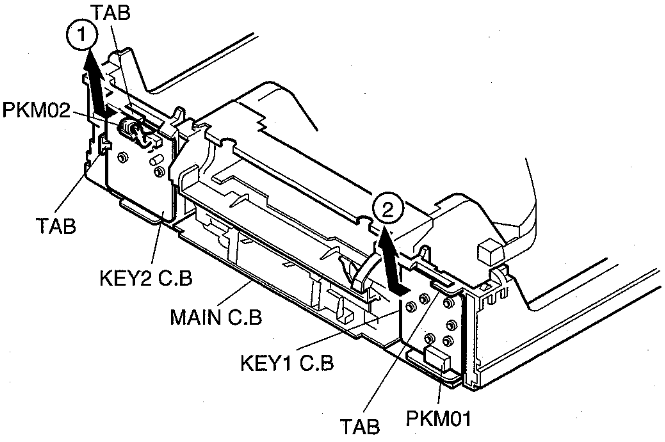

TAB
①
PKM02
TAB
②
KEY2 C.B
MAIN C.B
KEY1 C.B
TAB
PKM01

Fig. 2

4. Mechanism Removal (see Fig. 3)

1) Disconnect the drum FF cable from the connector (PMD01) on the Main C.B.

2) Disconnect the ACE head FF cable from the connector (P3D02) on the Main C.B.

3) Remove 6 screws Ⓐ.

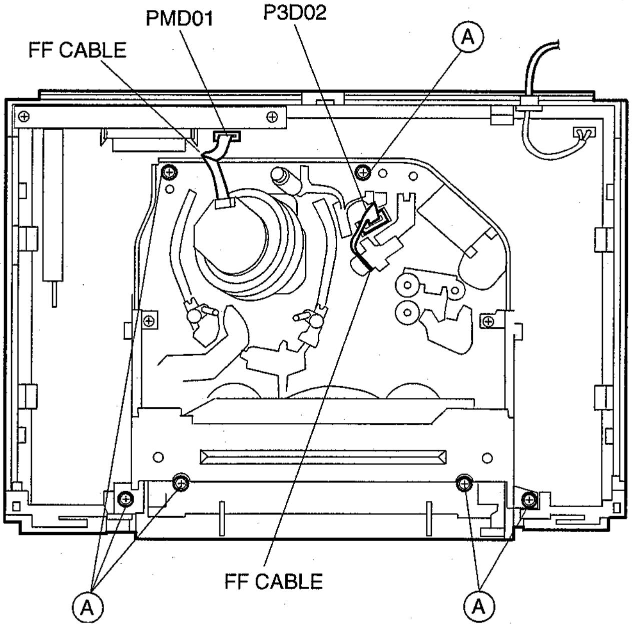

PMD01
P3D02
FF CABLE
Ⓐ
FF CABLE
Ⓐ
Ⓐ

Fig. 3

5. Main C.B. Removal (see Fig. 4)

1) Remove 2 screws Ⓑ holding the panel assy, distri-butor.

2) Release 5 tabs, and then simultaneously lift the panel assembly, distributor and Main C.B. to remove them.

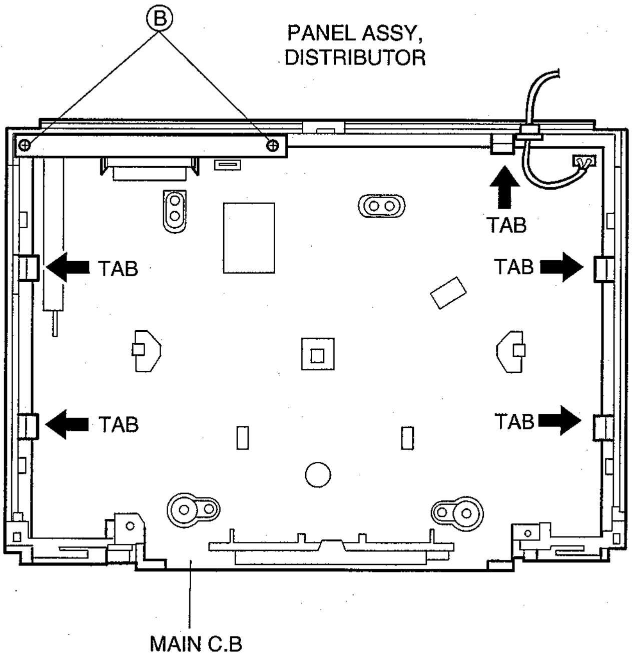
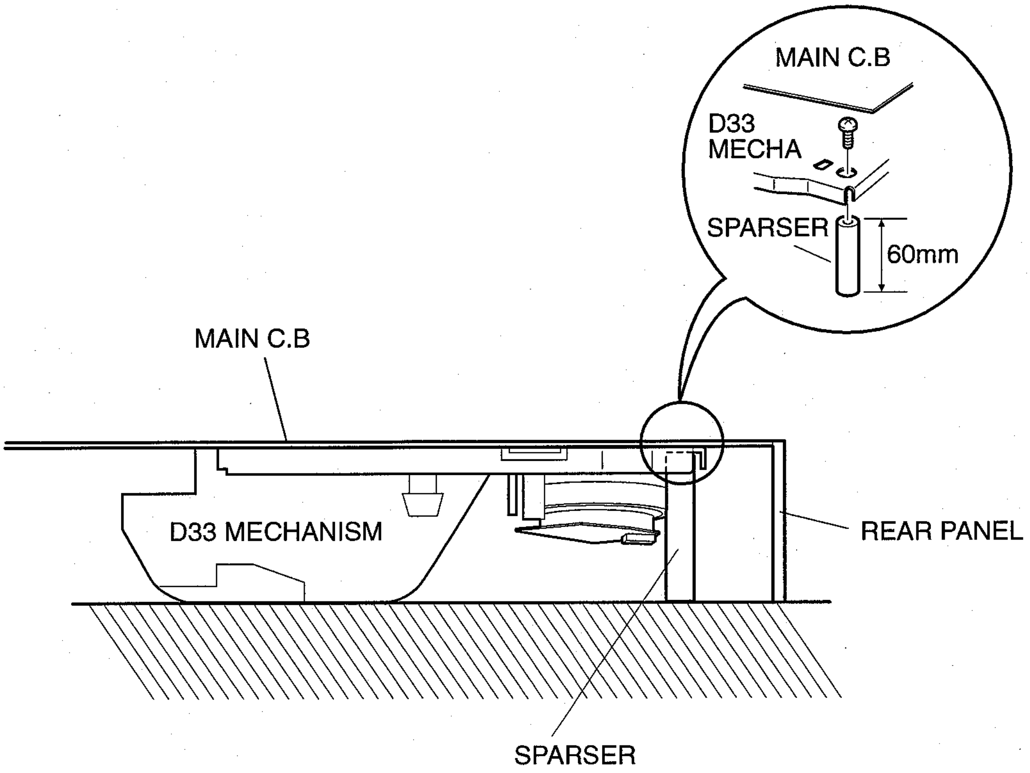

Ⓑ
PANEL ASSY, DISTRIBUTOR
TAB
TAB
TAB
TAB
TAB
MAIN C.B

Fig. 4

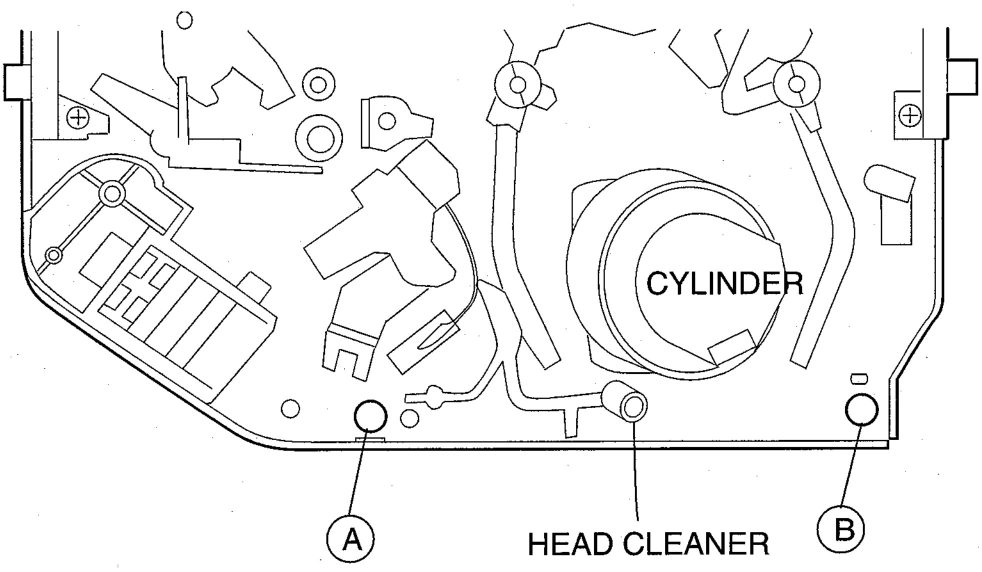
SERVICE POSITION

To set the mechanism to the service position in active status:
Insert a spacer as shown below: The service position can be set in the stable status without any defective contact.


MAIN C.B
D33
MECHA
SPARSER
60mm
MAIN C.B
D33 MECHANISM
REAR PANEL
SPARSER

Location

Install spacers at locations (A) and (B).


CYLINDER
A
HEAD CLEANER
B

Top View

VCR TEST TAPE INTERCHANGEABILITY TABLE

There are two types of the new allgnment tape CH-1B (for NTSC) and CH-2 (for PAL). On each tape four signals (1)-(4) are recorded for the times and in the order shown below.

(1) : 8min. → (2) : 2min. → (3) : 5min. → (4) : 5min.

The TTV-MP1 (for M-PAL), TTV-MS1 (for MESECAM) and TTV-S1 (for SECAM) allgnment tapes have the same contents as the previous tapes.

Method	Now in use TYPE		New TYPE		Application
	Model	Contents *1	Model	Contents *1	
NTSC	TTV-N1	NTSC, Color bar, 1 kHz, SP	CH-1B(2)	NTSC, Stairsteps, 1 kHz, SP	PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-NS1	NTSC, Color bar, 1 kHz, SP	No Changed.		For S-VHS (SQPB) check
	TTV-N1E	NTSC, Color bar, 1 kHz, EP	CH-1B(4) *2	NTSC, Color bar, 1 kHz, EP	Switching position ADJ.
	TTV-NS6E	NTSC, Color bar, No sound, EP	No Changed.		For S-VHS (SQPB) check
	TTV-N2	NTSC, Stairsteps, 7 kHz, SP	CH-1B(1)	NTSC, Stairsteps, 7 kHz, SP	Head ACE Azimuth ADJ.
	TTV-N12 (SCV-1998)	NTSC, Color bar, 1 kHz, SP	CH-1B(4)	NTSC, Color bar, 1 kHz, EP	FM Envelope ADJ. X-Value ADJ.
	TTV-N6 (TTV-N06T)	NTSC, Mono scope, 7 kHz, SP	No Changed.		For total picture quality check (resolution, etc)
	TTV-N7A	NTSC, Stairsteps, 1 kHz, SP, HiFi 400 Hz	CH-1B(3)	NTSC, Color bar, No sound SP, HiFi 400 Hz	HiFi Audio PB Level ADJ.
PAL	TTV-P1	PAL, Color bar, 1 kHz, SP	CH-2 (2) * 3	PAL, Stairsteps, 1 kHz, SP	Switching position ADJ. PB-Y Level/General electrical ADJ. Head ACE Height/Tilt ADJ.
	TTV-P1L	PAL, Color bar, 1 kHz, LP	CH-2 (4)	PAL, Color bar, 1 kHz, LP	Switching position. (LP Model) FM Envelope ADJ. (LP Model) X-Value ADJ. (LP Model)
	TTV-P2	PAL, Stairsteps, 6 kHz, SP	CH-2 (1)	PAL, Stairsteps, 6 kHz, SP	HEAD ACE Azimuth ADJ. FM Envelope ADJ. (SP Model) X-Value ADJ. (SP Model)
	TTV-P6 (TTV-N06T)	PAL, Monoscope, 6 kHz, SP	No Changed.		For total picture quality check (resolution, etc)
	TTV-P7	PAL, Stairsteps, 1 kHz, SP, HiFi 1 kHz	CH-2 (3)	PAL, Color bar, No sound SP, HiFi400 Hz	HiFi Audio PB Level ADJ.
	TTV-P16	PAL, Color bar, 400 Hz, SP, HiFi 1 kHz	No Changed.		FM Filter ADJ.

* 1. Described in the order of color format. video signal. linear audio. tape speed and Hi-Fi audio.
* 2. Use CH-1B (1)-(3) with models used exclusively in the SP mode.
* 3. Use CH-2 (3) and (4) when it is necessary to observe the chroma signal.

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
⚠	S2-309-024-040		SENSORLTV-817B PHOTO COU
	SI-SS4-310-00A		IC,KA431AZ
⚠	SA-400-811-220		IC,KA7552
	SI-TO1-238-00E		IC,TA1238F
	SI-SA7-159-80A		IC,LA71598M
	SI-HI6-432-19A		IC,HD6432197XA04F
	SI-SS3-082-00A		IC,KA3082
	SI-AL2-416-00B		IC,AT24C16-10PC
	SI-KE7-031-00A		IC,KIA7031P
	87-001-196-010		IC,KIA7042P
	SI-NE1-631-10A		IC,UPD16311GC-AB6
	SI-IT3-417-00B		IC,MSP3417D-QG<57,77>
	SI-SA7-479-30A		IC,LC74793<77>
	SI-PH9-605-00A		IC,TDA9605H<57,77>
	SI-MT1-443-00A		IC,MM1443XJ
TRANSISTOR			
⚠	ST-F38-002-0AA		TR,SSSS3N80A
	ST-R12-730-9AA		TR,KTA1273-TP-Y
	ST-R32-050-9AB		TR,KTC3205-TP-Y
	ST-R12-680-9BA		TR,KTA1268-BL
	S7-A30-293-010		TR,KTC2804-Y
	S3-1KR-A10-3M0		TR,KRA103M-TP
	ST-R10-030-9AA		TR,KSR1003
	ST-R31-990-9AF		TR,KTC3199-BL
	SK-RC1-01M-000		TR,KRC101M
	ST-R12-670-9AC		TR,KTA1267-GR
	ST-R53-430-9BA		TR,2SC5343-L
	ST-R10-300-9AE		TR,KRC103M
	ST-R19-800-9CA		TR,2SA1980G
	ST-R53-440-9AA		TR,2SC5344Y
	ST-R12-010-9AC		TR,SRC1201 4.7K,
DIODE			
	SD-D01-000-9CA		DIODE,EG01CW
	SD-R18-020-9AA		DIODE,ERA18-02KFRB
	SD-R10-400-9BA		DIODE,RL104F
	SD-R81-004-0BA		DIODE,ERC81-004L22
	SD-R20-200-0AB		DIODE,HER202 BK
	SD-D20-700-0AA		DIODE,2A07
	SD-S14-148-9BB		DIODE,1N4148
	SD-R10-400-9AB		DIODE,RL104
	87-070-173-010		DIODE,S1WBA60
MAIN C.B			
BD141	S6-360-04C-000		COIL,BFS3550R2FD8
⚠C101	S6-240-88K-000		CAP,0.1UF-275VAC
⚠C102	S6-240-88K-000		CAP,0.1UF-275VAC
⚠C103	SC-E47-6CU-611		CAP,E 47UF-400V
⚠C105	87-016-375-010		CAP,0.01UF-630V
⚠C106	S6-240-87B-000		CAP,100P-1KV
⚠C112	87-012-379-010		CAP,3300PF-400V
⚠C113	SA-1B3-0KH-2M0		CAP,220PF-400V
C115	87-010-408-040		CAP,E 47UF-50V
C116	87-010-237-910		CAP,E 1000UF-16V
C117	87-010-375-080		CAP,E 330-10V
C118	87-010-248-080		CAP,E 220-10V
C119	87-010-408-040		CAP,E 47UF-50V
C120	87-010-387-010		CAP,E 470UF-25V KME
C121	87-010-387-080		CAP,E 470UF-25V
C124	87-015-681-080		CAP,E 10-16V
C144	87-010-408-040		CAP,E 47UF-50V
C151	87-015-681-080		CAP,E 10-16V
C153	87-015-681-080		CAP,E 10-16V
C201	87-010-402-040		CAP,E 2.2-50V
C203	87-010-400-080		CAP,E 0.47-50V
C206	87-010-400-080		CAP,E 0.47-50V
C208	87-015-695-080		CAP,E 1.0-50V
C213	87-010-402-040		CAP,E 2.2-50V
C303	87-015-695-080		CAP,E 1.0-50V
C304	87-015-684-080		CAP,E 47-16V
C310	87-015-698-080		CAP,E 4.7-50V
C315	87-015-681-080		CAP,E 10-16V
C316	87-015-681-080		CAP,E 10-16V
C318	87-015-695-080		CAP,E 1.0-50V
C320	87-015-695-080		CAP,E 1.0-50V
C322	87-015-684-080		CAP,E 47-16V
C325	87-015-695-080		CAP,E 1.0-50V
C326	87-015-681-080		CAP,E 10-16V
C327	87-015-681-080		CAP,E 10-16V
C333	87-015-681-080		CAP,E 10-16V
C337	87-015-698-080		CAP,E 4.7-50V
C339	87-015-698-080		CAP,E 4.7-50V
C346	87-015-684-080		CAP,E 47-16V
C348	87-015-695-080		CAP,E 1.0-50V
C354	87-015-684-080		CAP,E 47-16V
C358	87-015-695-080		CAP,E 1.0-50V
C374	87-015-684-080		CAP,E 47-16V
C376	87-015-681-080		CAP,E 10-16V
C377	87-015-681-080		CAP,E 10-16V
C379	87-010-403-040		CAP,E 3.3-50V
C386	87-010-552-040		CAP,E 22-16V
C389	87-015-698-080		CAP,E 4.7-50V
C390	87-010-552-040		CAP,E 22-16V
C392	87-010-408-040		CAP,E 47UF-50V
C500	87-016-455-080		CAP,E 470UF-6.3V<77>
C500	87-016-040-080		CAP,0.047F-5.5V<EXCEPT 77>
C502	87-015-684-080		CAP,E 47-16V
C503	87-016-088-040		CAP,E 220-6.3V
C504	87-016-088-040		CAP,E 220-6.3V
C505	87-015-684-080		CAP,E 47-16V
C510	87-015-684-080		CAP,E 47-16V
C523	87-010-552-040		CAP,E 22-16V
C524	87-015-684-080		CAP,E 47-16V
C526	87-016-130-080		CAP,47-25V
C530	87-015-681-080		CAP,E 10-16V
C534	87-015-698-080		CAP,E 4.7-50V
C535	87-015-698-080		CAP,E 4.7-50V
C546	87-016-130-080		CAP,47-25V
C561	87-016-088-040		CAP,E 220-6.3V
C591	87-016-088-040		CAP,E 220-6.3V
C5A5	87-015-695-080		CAP,E 1.0-50V
C5F2	87-010-408-040		CAP,E 47UF-50V
C5F3	SC-E22-73D-638		CAP,E 220-10V
C5P9	87-015-698-080		CAP,E 4.7-50V
C701	87-015-698-080		CAP,E 4.7-50V
C703	87-015-681-080		CAP,E 10-16V
C704	87-015-684-080		CAP,E 47-16V
C706	87-016-455-080		CAP,E 470UF-6.3V
C7S1	87-010-265-080		CAP,E 33-16V
C7V1	87-015-684-080		CAP,E 47-16V<77>
C7V6	87-015-698-080		CAP,E 4.7-50V<77>
C7V7	SC-N10-50K-948		CAP,1UF-50V<77>
C7V8	87-015-695-080		CAP,E 1.0-50V<77>
C806	87-015-698-080		CAP,E 4.7-50V<57,77>
C807	87-015-698-080		CAP,E 4.7-50V<57,77>
C810	87-015-681-080		CAP,E 10-16V<57,77>
C811	87-015-681-080		CAP,E 10-16V<57,77>
C813	87-015-681-080		CAP,E 10-16V<57,77>
C814	87-015-681-080		CAP,E 10-16V<57,77>
C815	87-015-681-080		CAP,E 10-16V<57,77>
C816	87-015-681-080		CAP,E 10-16V<57,77>
C817	87-015-681-080		CAP,E 10-16V<57,77>
C818	87-015-698-080		CAP,E 4.7-50V<57,77>
C819	87-015-681-080		CAP,E 10-16V<57,77>
C821	87-015-684-080		CAP,E 47-16V<57,77>

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C822	87-015-681-080		CAP,E 10-16V<57,77>
C823	87-015-681-080		CAP,E 10-16V<57,77>
C824	87-015-681-080		CAP,E 10-16V<57,77>
C825	87-015-684-080		CAP,E 47-16V<57,77>
C827	87-015-681-080		CAP,E 10-16V<57,77>
C828	87-015-684-080		CAP,E 47-16V<57,77>
C832	87-015-684-080		CAP,E 47-16V
C835	87-010-400-080		CAP,E 0.47-50V<57,77>
C902	87-016-455-080		CAP,E 470UF-6.3V
C912	87-016-455-080		CAP,E 470UF-6.3V
C956	87-015-695-080		CAP,E 1.0-50V
C960	87-015-695-080		CAP,E 1.0-50V
C961	87-015-695-080		CAP,E 1.0-50V
C962	87-015-695-080		CAP,E 1.0-50V
C963	87-010-552-040		CAP,E 22-16V
C964	87-015-695-080		CAP,E 1.0-50V
C9A1	87-015-695-080		CAP,E 1.0-50V<91,93,99>
C9A2	87-015-695-080		CAP,E 1.0-50V<91,93,99>
C9A3	87-015-695-080		CAP,E 1.0-50V<91,93,99>
C9A5	87-015-681-080		CAP,E 10-16V<91,93,99>
C9A6	87-015-681-080		CAP,E 10-16V<91,93,99>
C9A7	87-015-681-080		CAP,E 10-16V<91,93,99>
C9F7	87-015-695-080		CAP,E 1.0-50V<93,77>
CS501	S6-00R-DB0-04C		SW,MPU10252MLB4 MIC
DIG501	S3-02R-1N0-03A		LEVEL METER DH 9MT168GK<57,77>
DIG501	S3-02R-1N0-03B		LEVEL METER 7MT229GK<91,93,99>
ES501	S9-31R-001-6A0		SENSOR END
ES502	S9-31R-001-6A0		SENSOR END
⚠F101	S5-850-11T-000		FUSE,1600MA 250V
⚠F102	87-001-196-010		ICP-N10 T104
⚠FH01	S5-860-08B-000		HOLDER,FUSE CLIP
⚠FH02	S5-860-08B-000		HOLDER,FUSE CLIP
FL301	S6-330-32K-000		COIL,OSC BIAS 1CHIP 5V
JK801	S6-12R-C00-2C0		JACK,RCA RCA-208C-06<57,77>
JK901	S6-20R-M00-02A		SOCKET 2F-21P
⚠L102	S6-161-45H-000		FILTER SHT LFS2020V4-04350
L103	S6-330-88G-000		COIL,CHOCK TP 5MM
L104	S6-330-88G-000		COIL,CHOCK TP 5MM
L105	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L301	87-005-196-080		COIL,10UH
L302	87-003-286-080		COIL,56 2.3-3.4-5
L303	87-003-152-080		INDUCTOR,100M 2.3-3.4-5<99,57,77>
L303	87-003-286-080		COIL,56 2.3-3.4-5<91,93>
L305	87-005-196-080		COIL,10UH
L307	87-005-196-080		COIL,10UH
L308	87-005-440-080		COIL,47M 6-6-5
L310	87-005-196-080		COIL,10UH
L503	87-005-196-080		COIL,10UH
L504	87-005-196-080		COIL,10UH
L505	87-005-196-080		COIL,10UH
L506	87-005-686-080		COIL,15UH
L5F1	87-005-196-080		COIL,10UH
L5S1	87-003-148-080		INDUCTOR,33
L702	87-005-196-080		COIL,10UH
L703	87-005-196-080		COIL,10UH
L704	87-003-145-080		INDUCTOR,8.2
L7V1	87-005-196-080		COIL,10UH<77>
L801	87-005-196-080		COIL,10UH
L8R1	87-003-152-080		INDUCTOR,100M 2.3-3.4-5<57,77>
L8R2	87-003-152-080		INDUCTOR,100M 2.3-3.4-5<57,77>
L901	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L904	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L905	S6-360-04C-000		COIL,BFS3550R2FD8
L906	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L907	S6-360-04C-000		COIL,BFS3550R2FD8
L911	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L912	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L914	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
L916	87-003-152-080		INDUCTOR,100M 2.3-3.4-5
LD501	S9-31R-001-7A0		LED
MS501	S6-00R-PY0-01B		SW,MMS00420ZMBO MIC
P3D01	S5-612-34W-000		GF120-10S-TS-A LGC 10P MP<57,77>
P3D01	S5-612-34Y-000		CONN,6P<99>
P3D01	S5-612-34Z-000		CONN,3P<91,93>
P3D02	S6-30R-5S0-08E		CONN,6P
P3D03	S5-612-51B-000		GB201-2P-TS-B(LGC) P
PMC01	S6-30R-2P0-05C		CONN,8P 2MM
PMD01	S5-612-34V-000		GF120-07S-TS LGC 7P SP
PMK01	S5-618-43D-000		CONN,TUC-P05P 5P
PMK02	S6-724-34M-000		CONN ASSY 10P-150<93,77>
PMK02	S6-724-34B-000		CONN ASSY 5P-150<91,99,57>
PML01	S6-30R-2S0-11A		CONN,2P
⚠PW101	S5-612-92B-000		GP390 LGC 3P STRAIG P
⚠R101	S6-140-07R-000		RES,2.7-2W
R149	87-022-574-010		RES,FIX O 0.47-2W
R/C501	S7-12R-293-8GA		REMOCON RECEIVER
RS501	S5-00R-AB0-02A		SENSOR GP1S566
RS502	S5-00R-AB0-02A		SENSOR GP1S566
⚠T101	S6-420-23U-000		TRANSFORMER,SMPS SJE-023U
TU701	S7-00R-PL0-1A0		TUNER TADC-S101D
W101	87-005-440-080		COIL,47M 6-6-5
X201	S2-02R-242-8AE		X'TAL,H49U TAEIL 4286230H
X301	S2-02R-244-3AE		CRYSTAL,STANDARD H49U
X501	S2-02R-310-01F		X'TAL,10.0000
X502	S5-290-01K-000		X'TAL,32.768KHZ
X503	S2-02R-317-71E		X'TAL,17.734476MHZ
ZD104	SD-Z56-260-9AA		ZENER,GDZJ5.6B 26MM TP
ZD141	SD-Z22-000-9ED		ZENER,MTZ22B
ZD142	87-A40-458-080		ZENER,MTZ18B
ZD151	SD-Z13-260-9AB		ZENER,GDZJ13A 26MM
ZD501	SD-Z68-260-9AB		ZENER,GDZJ6.8C
ZD503	SD-Z68-260-9AB		ZENER,GDZJ6.8C
ZD701	SD-Z33-260-9AA		ZENER,GDZJ33B 26MM TP
ZD801	SD-Z56-260-9AA		ZENER,GDZJ5.6B 26MM TP
ZD802	SD-Z56-260-9AA		ZENER,GDZJ5.6B 26MM TP
ZD803	SD-Z13-260-9AB		ZENER,GDZJ13A 26MM<57,77>
ZD804	SD-Z13-260-9AB		ZENER,GDZJ13A 26MM<57,77>
ZD805	SD-Z51-000-9AJ		ZENER,GDZJ5.1B TP
ZD805	SD-Z51-000-9AJ		ZENER,GDZJ5.1B TP

KEY1 C.B

PKM01	S5-618-44D-000		CONN,5P
SW905	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW905	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW906	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW906	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW907	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW907	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW908	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW908	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW909	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW909	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW910	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW910	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW911	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW911	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW912	S5-562-19B-000		SW,SKHV10910B<91,93,99>

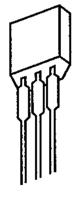
KEY2 C.B

BD981	S6-360-04C-000		COIL,BFS3550R2FD8<93,77>
JK901	S5-720-34S-000		JACK,ST 2P(YL)<93,77>
JK902	S5-720-34R-000		JACK,ST 2P(WHT)<93,77>
JK903	S5-720-34Q-000		JACK,ST 2P(RED)<77>
L901	87-003-152-080		INDUCTOR,100M 2.3-3.4-5<77>
L902	87-003-152-080		INDUCTOR,100M 2.3-3.4-5<93,77>
LE901	SD-L53-110-0AA		LED,SG5311(GRN)<91,93,99>
LED902	SD-L53-110-0AA		LED,SG5311(GRN)<57,77>
PKM02	S5-610-36I-000		CONN,8283-1012 WH ELCO<93,77>

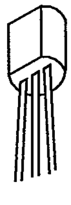
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
PKM02	S5-610-36D-000		MA V 8283-0512 WH ELCO<91,99,57>
SW901	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW902	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW903	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW903	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
SW904	S5-562-19B-000		SW,SKHV10910B<91,93,99>
SW904	S5-562-82C-000		SW,SKQNQED ALPS 5MM<57,77>
NICAM C.B			
C751	87-015-684-080		CAP,E 47-16V<57,77>
C757	87-015-684-080		CAP,E 47-16V<57,77>
C758	87-015-681-080		CAP,E 10-16V<57,77>
C759	87-015-681-080		CAP,E 10-16V<57,77>
C762	SC-Q39-21N-409		CAP,0.0039U 100V<57,77>
C763	SC-Q39-21N-409		CAP,0.0039U 100V<57,77>
C766	87-010-403-040		CAP,E 3.3-50V<57,77>
C769	87-015-681-080		CAP,E 10-16V<57,77>
C770	87-015-684-080		CAP,E 47-16V<57,77>
L751	87-005-196-080		COIL,10UH<57,77>
L752	87-005-196-080		COIL,10UH<57,77>
L753	87-005-196-080		COIL,10UH<57,77>
L754	87-003-129-080		INDUCTOR,6800UH<57,77>
L755	87-003-129-080		INDUCTOR,6800UH<57,77>
P7M01	S5-618-48F-000		CABLE 9P<57,77>
P7M02	S5-618-48F-000		CABLE 9P<57,77>
X751	S5-290-219-000		X'TAL 18.432MHZ<57,77>

TYPE	MODEL NAME	SUFFIX
<77>	HV-FX7750	LE
<57>	HV-FX5700	LE
<99>	HV-FX990	LE
<93>	HV-GX935	LE
<91>	HV-GX915	LE

TRANSISTOR ILLUSTRATION



KRA103M
KRC103M
KTA1267
KTC101M
KTC3199



2SA1980
2SC5343
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KSR1003
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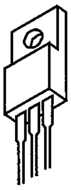
SRC1201



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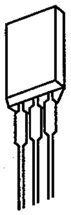
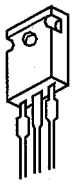
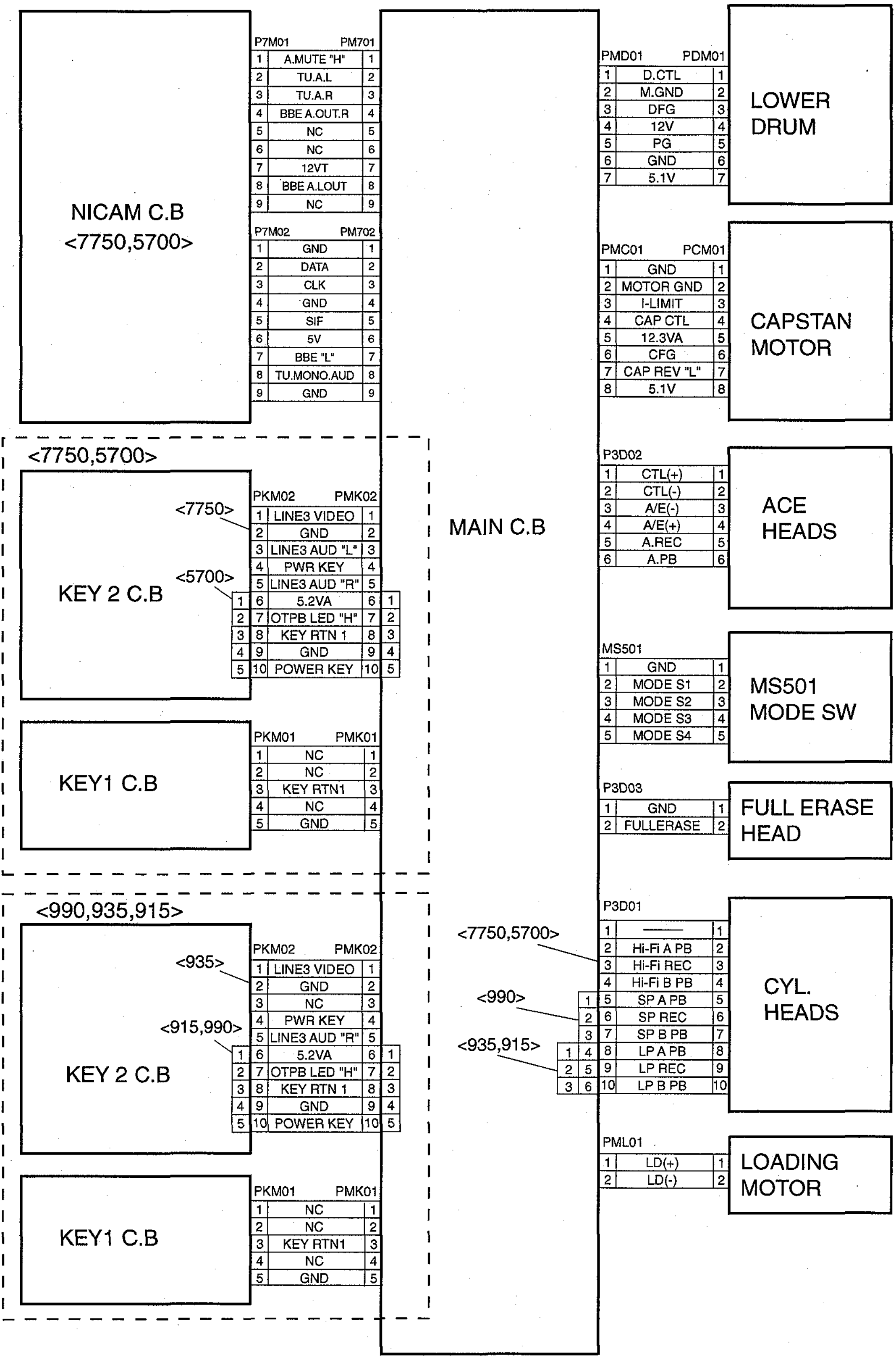


KTA1273
KTC3205



KTC2804

WIRE HARNESS DIAGRAM


NICAM C.B
<7750,5700>
<7750,5700>
KEY 2 C.B
<7750>
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KEY1 C.B
<990,935,915>
KEY 2 C.B
<935>
<915,990>
KEY1 C.B
MAIN C.B
LOWER DRUM
CAPSTAN MOTOR
ACE HEADS
MS501 MODE SW
FULL ERASE HEAD
<7750,5700>
<990>
<935,915>
CYL. HEADS
LOADING MOTOR

P7M01		PM701
1	A.MUTE "H"	1
2	TU.A.L	2
3	TU.A.R	3
4	BBE A.OUT.R	4
5	NC	5
6	NC	6
7	12VT	7
8	BBE A.LOUT	8
9	NC	9

P7M02		PM702
1	GND	1
2	DATA	2
3	CLK	3
4	GND	4
5	SIF	5
6	5V	6
7	BBE "L"	7
8	TU.MONO.AUD	8
9	GND	9

<7750,5700>

	PKM02		PMK02	
	1	LINE3 VIDEO	1	
	2	GND	2	
	3	LINE3 AUD "L"	3	
	4	PWR KEY	4	
	5	LINE3 AUD "R"	5	
1	6	5.2VA	6	1
2	7	OTPB LED "H"	7	2
3	8	KEY RTN 1	8	3
4	9	GND	9	4
5	10	POWER KEY	10	5

PKM01		PMK01
1	NC	1
2	NC	2
3	KEY RTN1	3
4	NC	4
5	GND	5

<990,935,915>

	PKM02		PMK02	
	1	LINE3 VIDEO	1	
	2	GND	2	
	3	NC	3	
	4	PWR KEY	4	
	5	LINE3 AUD "R"	5	
1	6	5.2VA	6	1
2	7	OTPB LED "H"	7	2
3	8	KEY RTN 1	8	3
4	9	GND	9	4
5	10	POWER KEY	10	5

PKM01		PMK01
1	NC	1
2	NC	2
3	KEY RTN1	3
4	NC	4
5	GND	5

PMD01		PDM01
1	D.CTL	1
2	M.GND	2
3	DFG	3
4	12V	4
5	PG	5
6	GND	6
7	5.1V	7

PMC01		PCM01
1	GND	1
2	MOTOR GND	2
3	I-LIMIT	3
4	CAP CTL	4
5	12.3VA	5
6	CFG	6
7	CAP REV "L"	7
8	5.1V	8

P3D02		
1	CTL(+)	1
2	CTL(-)	2
3	A/E(-)	3
4	A/E(+)	4
5	A.REC	5
6	A.PB	6

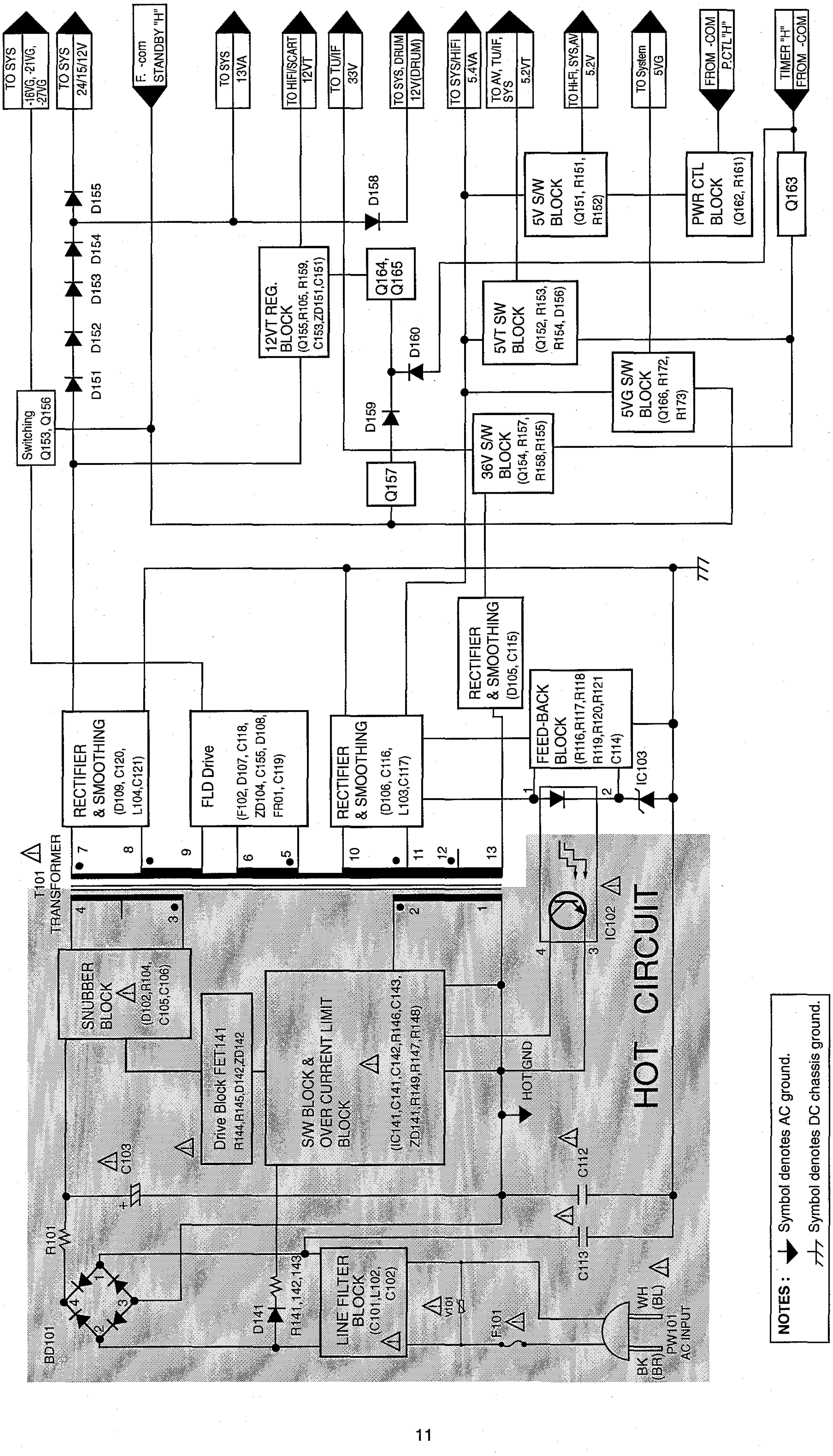
MS501		
1	GND	1
2	MODE S1	2
3	MODE S2	3
4	MODE S3	4
5	MODE S4	5

P3D03		
1	GND	1
2	FULLERASE	2

		P3D01		
		1	———	1
		2	Hi-Fi A PB	2
		3	Hi-Fi REC	3
		4	Hi-Fi B PB	4
	1	5	SP A PB	5
	2	6	SP REC	6
	3	7	SP B PB	7
1	4	8	LP A PB	8
2	5	9	LP REC	9
3	6	10	LP B PB	10

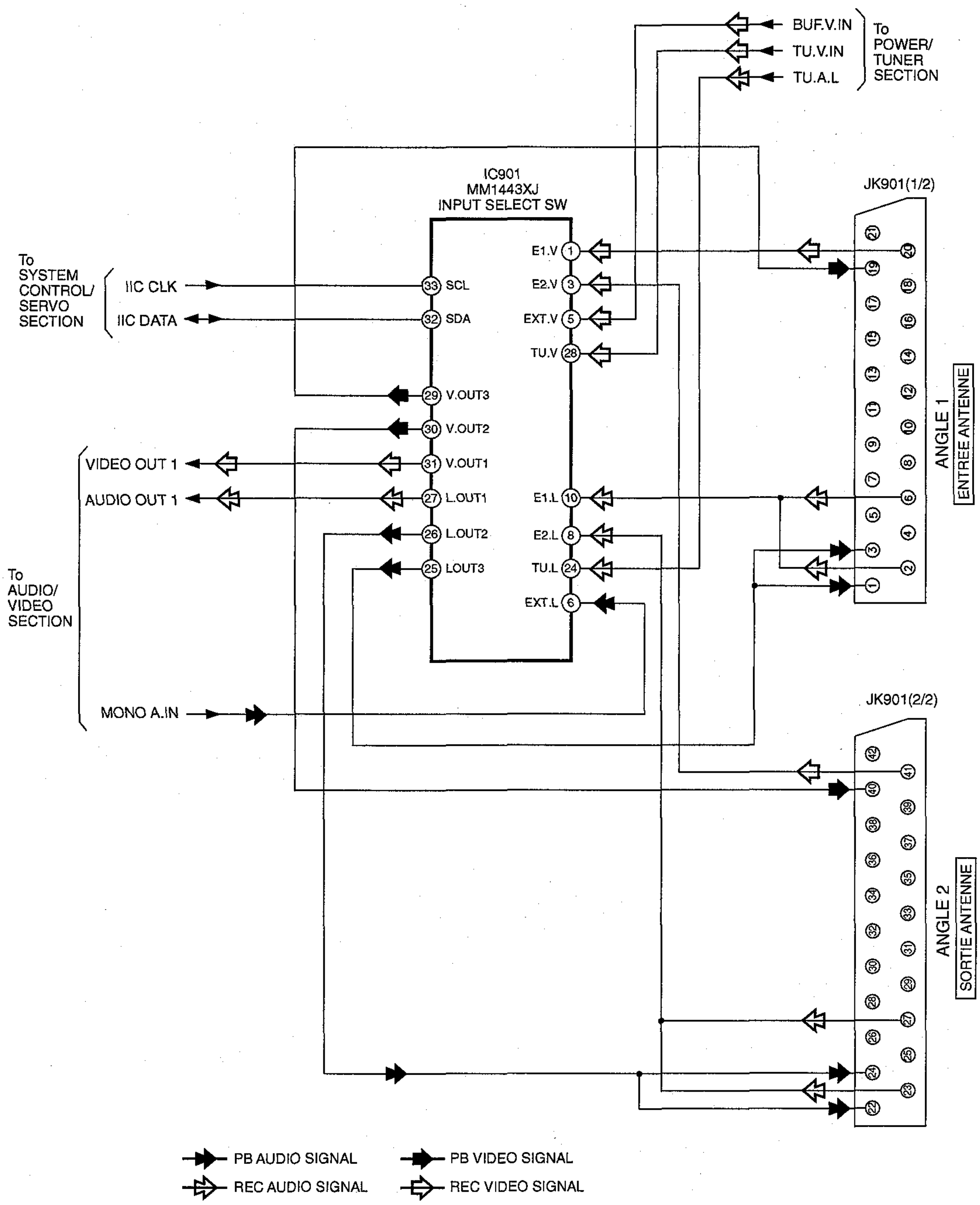
PML01		
1	LD(+)	1
2	LD(-)	2

BLOCK DIAGRAM-1 (POWER SECTION)

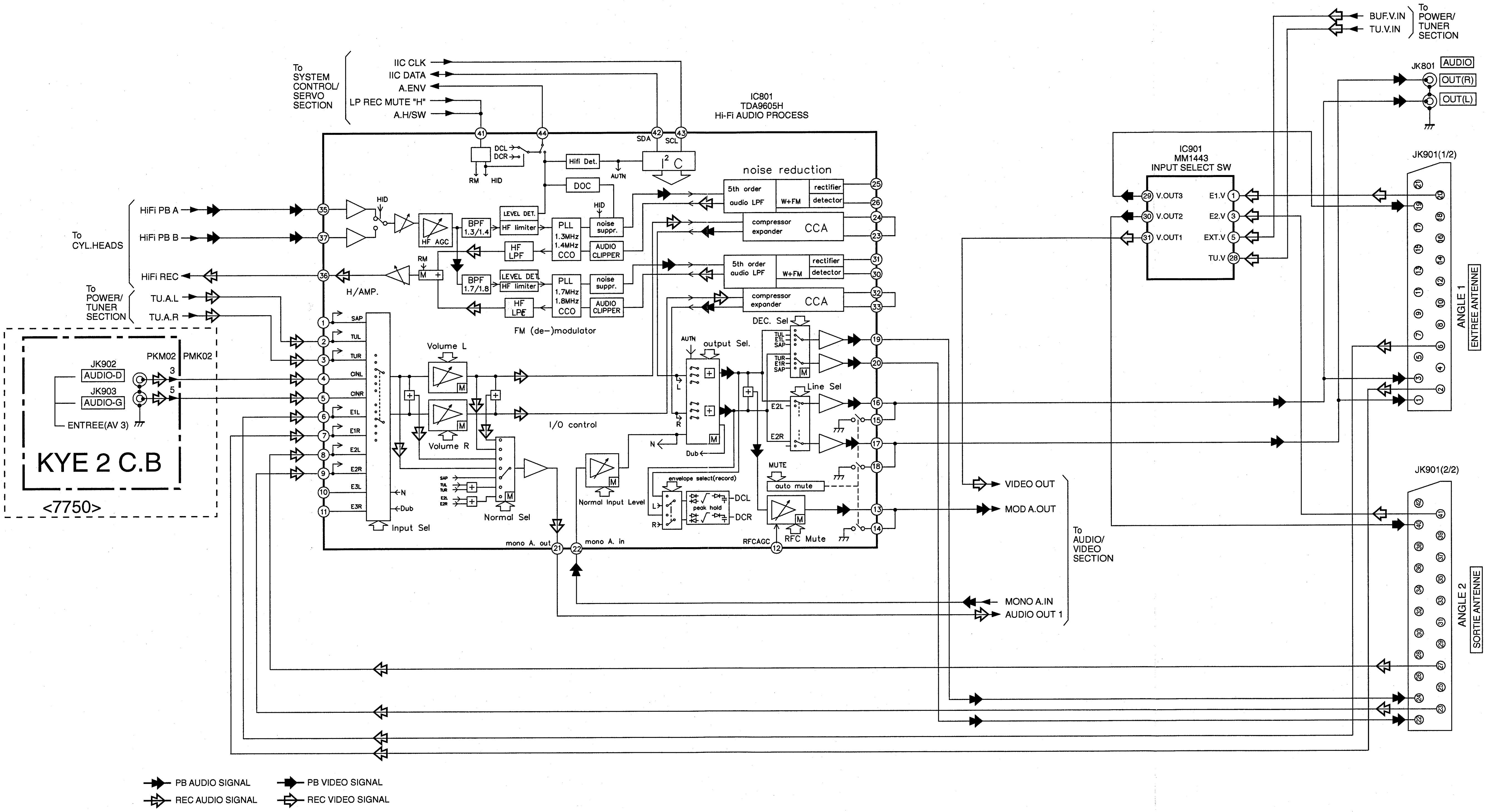

TO SYS -16VG, -21VG, -27VG
TO SYS 24/15/12V
F. -com STANDBY "H"
TO SYS 13VA
TO HIFI/SCART 12VT
TO TU/IF 33V
TO SYS, DRUM 12V(DRUM)
TO SYS/HiFi 5.4VA
TO AV, TU/IF, SYS 5.2VT
TO Hi-Fi, SYS,AV 5.2V
TO System 5VG
FROM -COM P.CTL "H"
TIMER "H" FROM -COM
D155
D154
D153
D152
D151
D158
D159
D160
Switching Q153, Q156
12VT REG. BLOCK (Q155,R105, R159, C153,ZD151,C151)
Q164, Q165
Q157
5V S/W BLOCK (Q151, R151, R152)
PWR CTL BLOCK (Q162, R161)
Q163
5VT SW BLOCK (Q152, R153, R154, D156)
5VG S/W BLOCK (Q166, R172, R173)
36V S/W BLOCK (Q154, R157, R158,R155)
RECTIFIER & SMOOTHING (D105, C115)
FEED-BACK BLOCK (R116,R117,R118 R119,R120,R121 C114)
IC103
RECTIFIER & SMOOTHING (D109, C120, L104,C121)
FLD Drive (F102, D107, C118, ZD104, C155, D108, FR01, C119)
RECTIFIER & SMOOTHING (D106, C116, L103,C117)
T101 TRANSFORMER
7
8
9
6
5
10
11
12
13
4
3
2
1
IC102
SNUBBER BLOCK (D102,R104, C105,C106)
Drive Block FET141 R144,R145,D142,ZD142
S/W BLOCK & OVER CURRENT LIMIT BLOCK (IC141,C141,C142,R146,C143, ZD141,R149,R147,R148)
HOT GND
HOT CIRCUIT
C103
C112
C113
R101
BD101
D141
R141,142,143
LINE FILTER BLOCK (C101,L102, C102)
V101
F101
WH (BL)
BK (BR)
PW101 AC INPUT

NOTES : Symbol denotes AC ground.
Symbol denotes DC chassis ground.

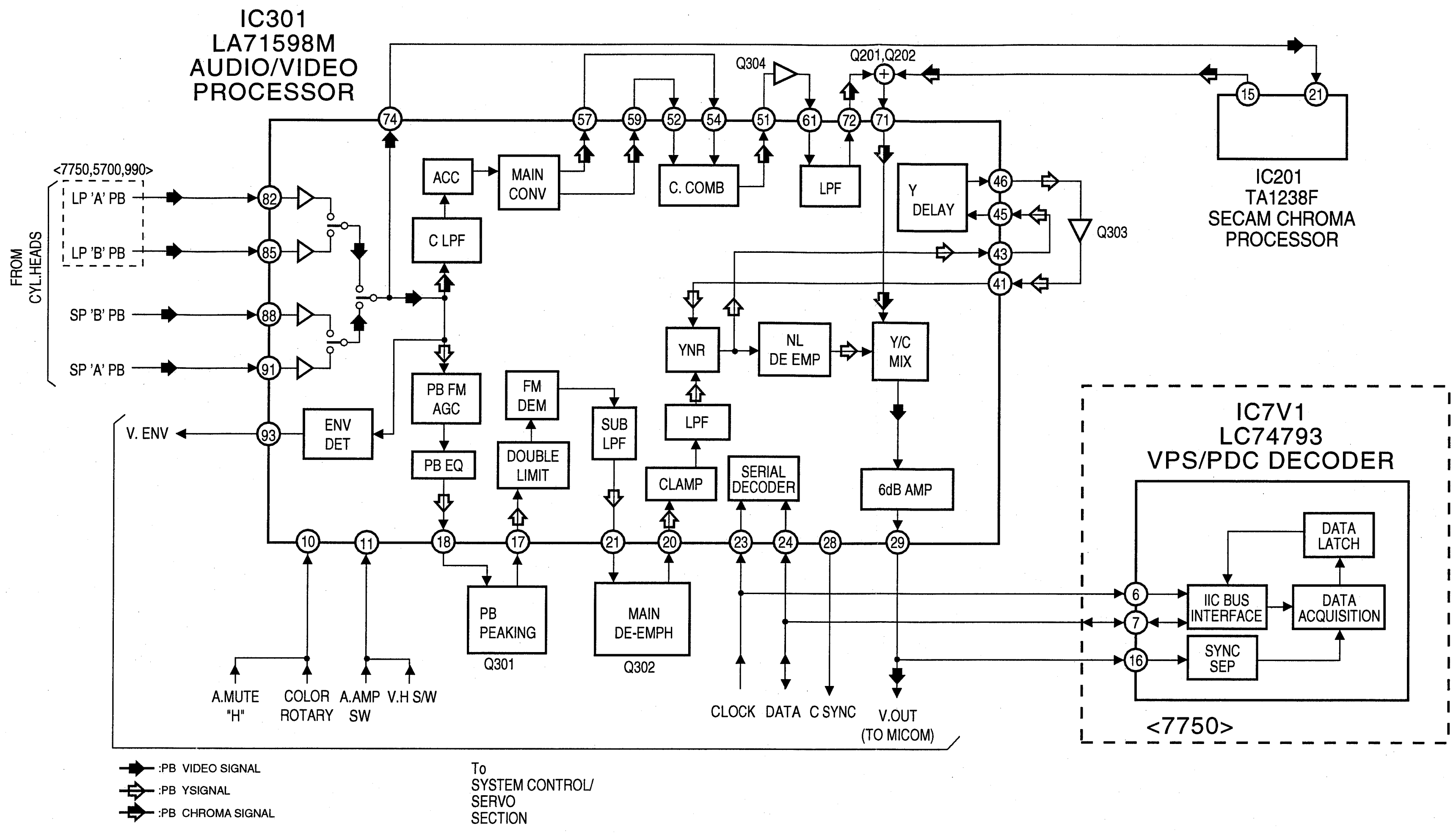
BLOCK DIAGRAM-2 (AUDIO/VIDEO SIGNAL SECTION) <HV-FX990/GX935/GX915>

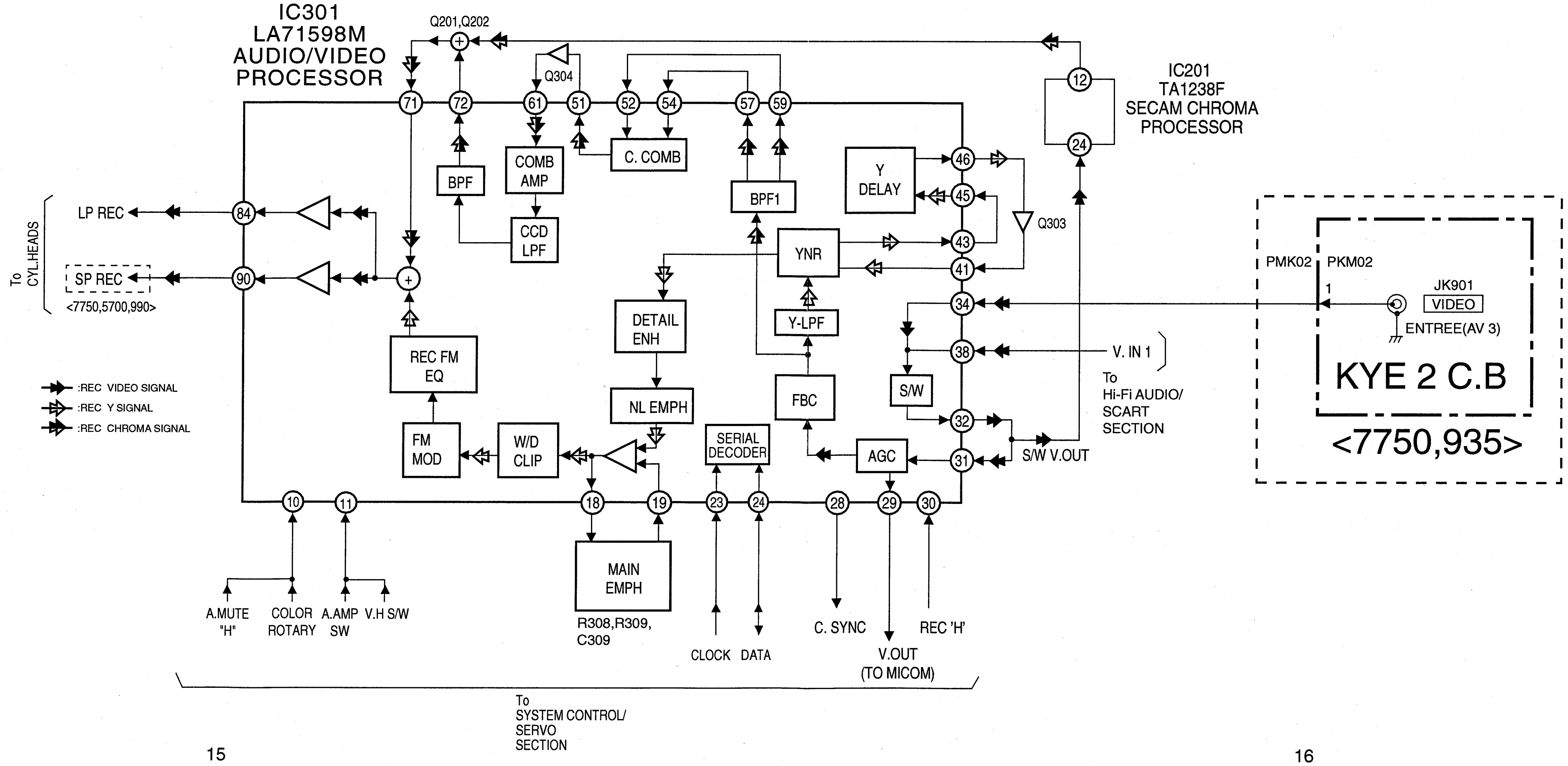

BUF.V.IN
TU.V.IN
TU.A.L
To POWER/ TUNER SECTION
IC901
MM1443XJ
INPUT SELECT SW
JK901(1/2)
To SYSTEM CONTROL/ SERVO SECTION
IIC CLK
IIC DATA
SCL
SDA
E1.V
E2.V
EXT.V
TU.V
V.OUT3
V.OUT2
V.OUT1
L.OUT1
L.OUT2
LOUT3
E1.L
E2.L
TU.L
EXT.L
VIDEO OUT 1
AUDIO OUT 1
To AUDIO/ VIDEO SECTION
MONO A.IN
ANGLE 1
ENTREE ANTENNE
JK901(2/2)
ANGLE 2
SORTIE ANTENNE
PB AUDIO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
REC VIDEO SIGNAL

BLOCK DIAGRAM-3 (AUDIO/VIDEO SIGNAL SECTION) <HV-FX7750/5700>

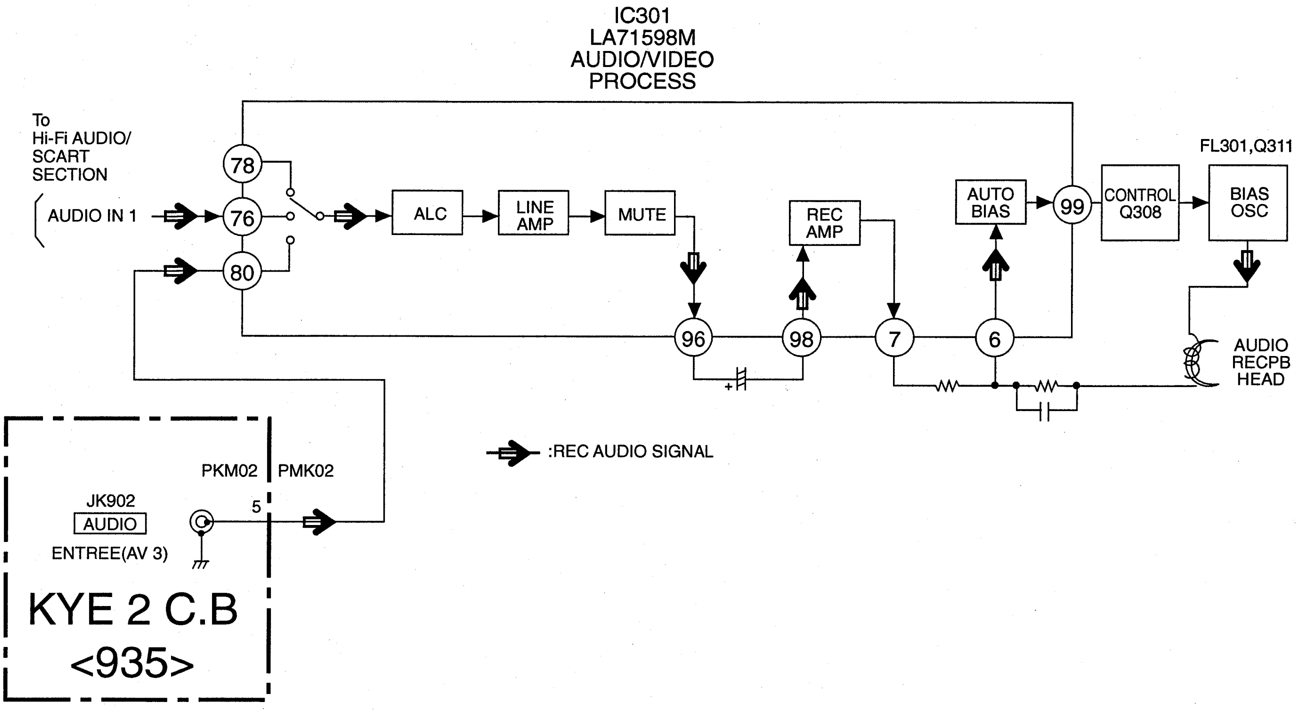

To SYSTEM CONTROL/ SERVO SECTION
IIC CLK
IIC DATA
A.ENV
LP REC MUTE "H"
A.H/SW
IC801
TDA9605H
Hi-Fi AUDIO PROCESS
SDA
SCL
I²C
DCL
DCR
RM
HID
Hifi Det.
AUTN
DOC
noise reduction
5th order audio LPF
W+FM
rectifier
detector
compressor expander
CCA
To CYL.HEADS
HiFi PB A
HiFi PB B
HiFi REC
To POWER/ TUNER SECTION
TU.A.L
TU.A.R
HF AGC
BPF 1.3/1.4
LEVEL DET.
HF limiter
PLL
1.3MHz
1.4MHz
CCO
noise suppr.
AUDIO CLIPPER
HF LPF
H/AMP.
BPF 1.7/1.8
1.7MHz
1.8MHz
FM (de-)modulator
SAP
TUL
TUR
CINL
CINR
E1L
E1R
E2L
E2R
E3L
E3R
Input Sel
N
Dub
Volume L
Volume R
I/O control
Normal Sel
Normal Input Level
mono A. out
mono A. in
output Sel.
DEC. Sel
Line Sel
MUTE
auto mute
envelope select(record)
peak hold
RFC Mute
RFCAGC
M
JK902
AUDIO-D
JK903
AUDIO-G
ENTREE(AV 3)
PKM02
PMK02
KYE 2 C.B
<7750>
VIDEO OUT
MOD A.OUT
MONO A.IN
AUDIO OUT 1
To AUDIO/ VIDEO SECTION
BUF.V.IN
TU.V.IN
To POWER/ TUNER SECTION
JK801
AUDIO
OUT(R)
OUT(L)
IC901
MM1443
INPUT SELECT SW
V.OUT3
V.OUT2
V.OUT1
E1.V
E2.V
EXT.V
TU.V
JK901(1/2)
ANGLE 1
ENTREE ANTENNE
JK901(2/2)
ANGLE 2
SORTIE ANTENNE
PB AUDIO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
REC VIDEO SIGNAL

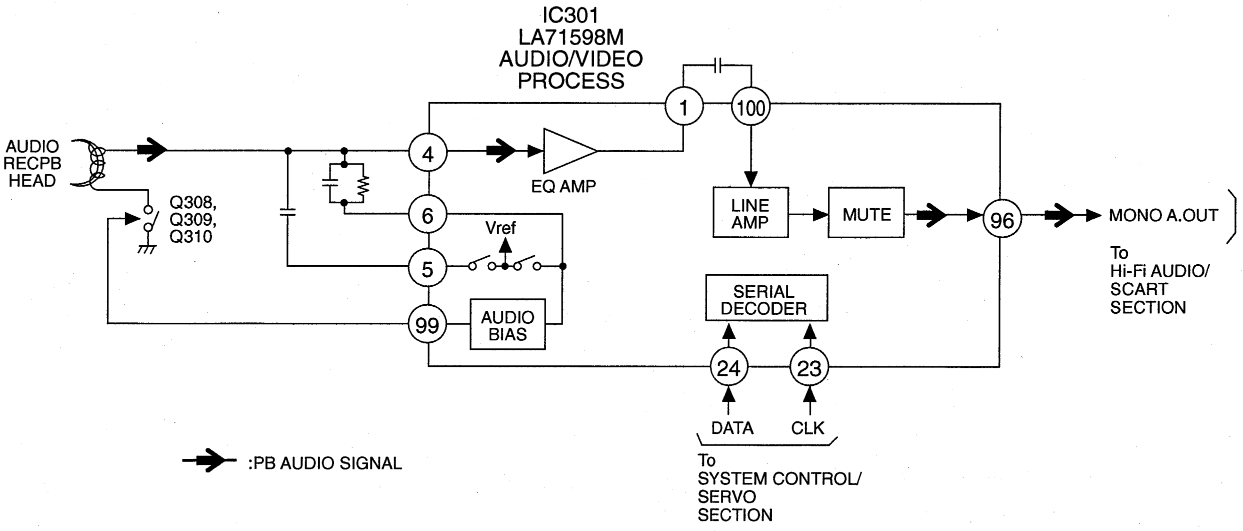
BLOCK DIAGRAM-4 (VIDEO SECTION)


IC301
LA71598M
AUDIO/VIDEO
PROCESSOR
<7750,5700,990>
LP 'A' PB
LP 'B' PB
SP 'B' PB
SP 'A' PB
FROM CYL.HEADS
V. ENV
ENV DET
ACC
MAIN CONV
C LPF
PB FM AGC
PB EQ
FM DEM
DOUBLE LIMIT
SUB LPF
C. COMB
LPF
Y DELAY
YNR
NL DE EMP
Y/C MIX
CLAMP
SERIAL DECODER
6dB AMP
PB PEAKING
Q301
MAIN DE-EMPH
Q302
Q304
Q201,Q202
Q303
A.MUTE "H"
COLOR ROTARY
A.AMP SW
V.H S/W
CLOCK
DATA
C SYNC
V.OUT (TO MICOM)
IC201
TA1238F
SECAM CHROMA
PROCESSOR
IC7V1
LC74793
VPS/PDC DECODER
DATA LATCH
IIC BUS INTERFACE
DATA ACQUISITION
SYNC SEP
<7750>
:PB VIDEO SIGNAL
:PB YSIGNAL
:PB CHROMA SIGNAL
To
SYSTEM CONTROL/
SERVO
SECTION

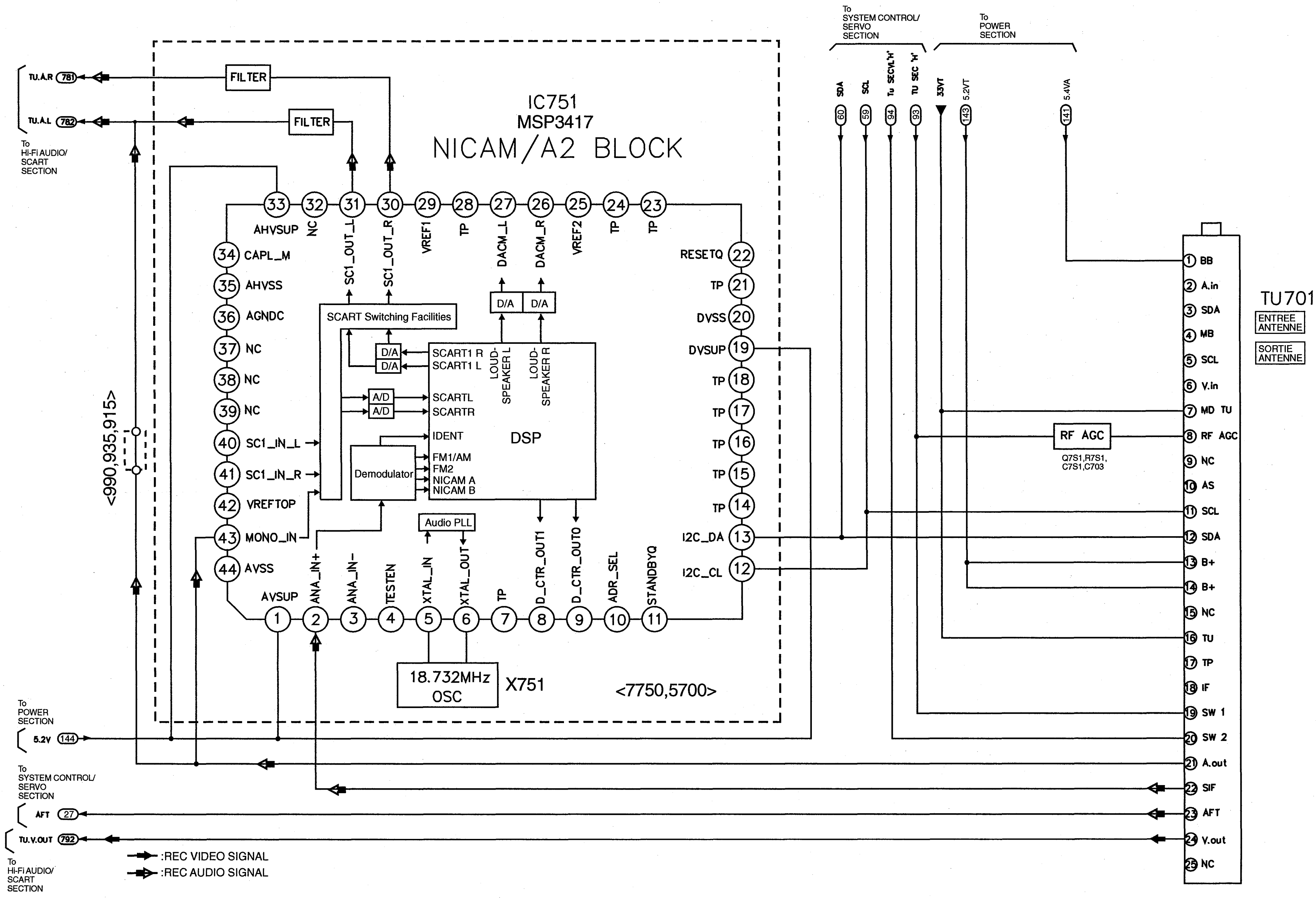

IC301
LA71598M
AUDIO/VIDEO
PROCESSOR
Q201,Q202
Q304
LP REC
SP REC
<7750,5700,990>
To CYL.HEADS
BPF
COMB AMP
CCD LPF
C. COMB
BPF1
Y DELAY
YNR
Y-LPF
DETAIL ENH
NL EMPH
REC FM EQ
FM MOD
W/D CLIP
SERIAL DECODER
FBC
S/W
AGC
MAIN EMPH
R308,R309,
C309
Q303
V. IN 1
To
Hi-Fi AUDIO/
SCART
SECTION
S/W V.OUT
IC201
TA1238F
SECAM CHROMA
PROCESSOR
PMK02
PKM02
JK901
VIDEO
ENTREE(AV 3)
KYE 2 C.B
<7750,935>
:REC VIDEO SIGNAL
:REC Y SIGNAL
:REC CHROMA SIGNAL
A.MUTE "H"
COLOR ROTARY
A.AMP SW
V.H S/W
CLOCK
DATA
C. SYNC
REC 'H'
V.OUT
(TO MICOM)
To
SYSTEM CONTROL/
SERVO
SECTION

BLOCK DIAGRAM-5 (NORMAL AUDIO SECTION)


IC301
LA71598M
AUDIO/VIDEO
PROCESS
To
Hi-Fi AUDIO/
SCART
SECTION
AUDIO IN 1
78
76
80
ALC
LINE AMP
MUTE
REC AMP
AUTO BIAS
99
CONTROL Q308
BIAS OSC
FL301,Q311
96
98
7
6
AUDIO
RECPB
HEAD
+
:REC AUDIO SIGNAL
PKM02
PMK02
JK902
AUDIO
ENTREE(AV 3)
5
KYE 2 C.B
<935>

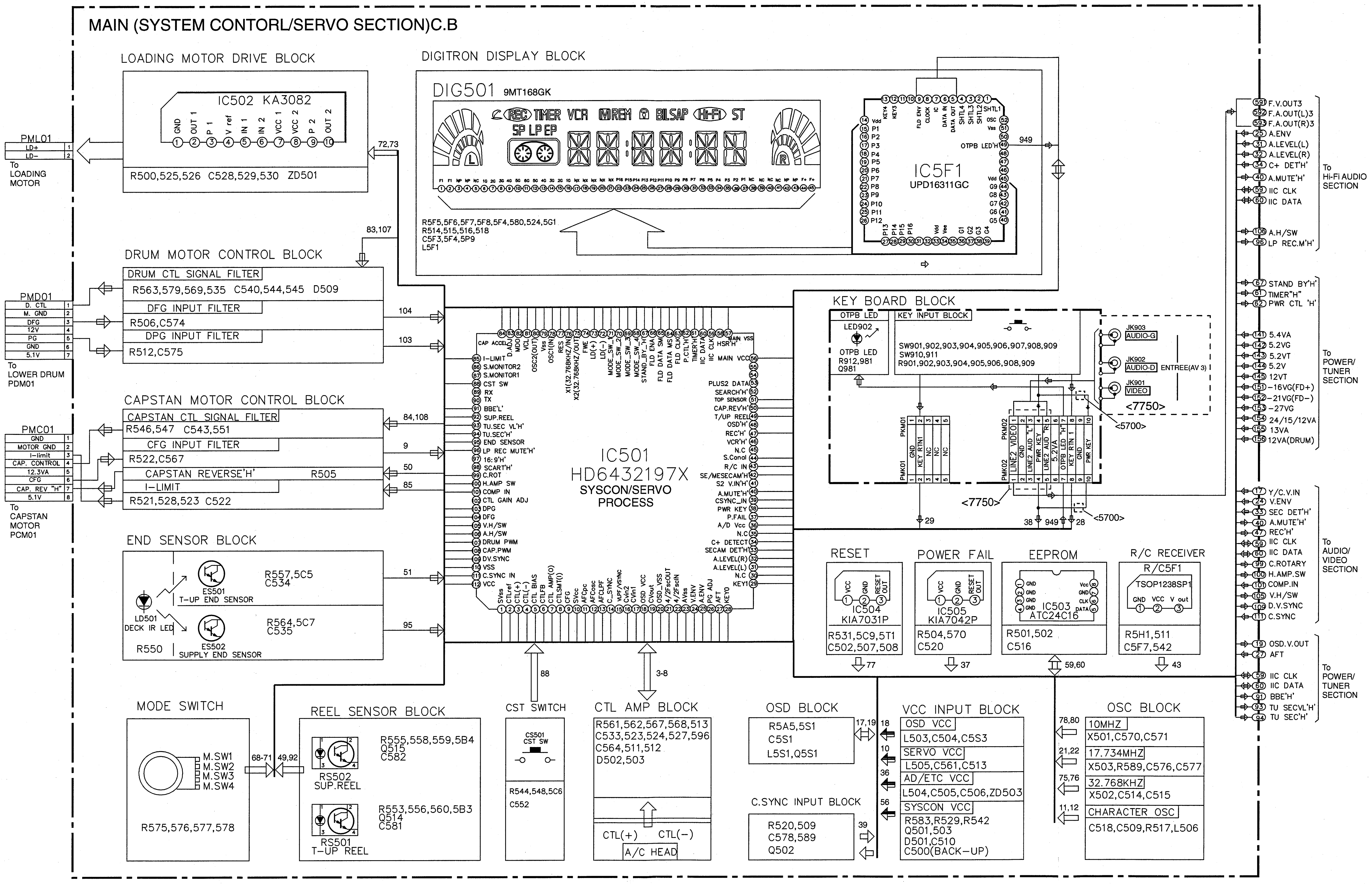

IC301
LA71598M
AUDIO/VIDEO
PROCESS
AUDIO
RECPB
HEAD
Q308,
Q309,
Q310
4
6
5
99
EQ AMP
Vref
AUDIO BIAS
1
100
LINE AMP
MUTE
96
MONO A.OUT
To
Hi-Fi AUDIO/
SCART
SECTION
SERIAL DECODER
24
23
DATA
CLK
To
SYSTEM CONTROL/
SERVO
SECTION
:PB AUDIO SIGNAL

BLOCK DIAGRAM-6 (TUNER, NICAM/A2 SECTION)

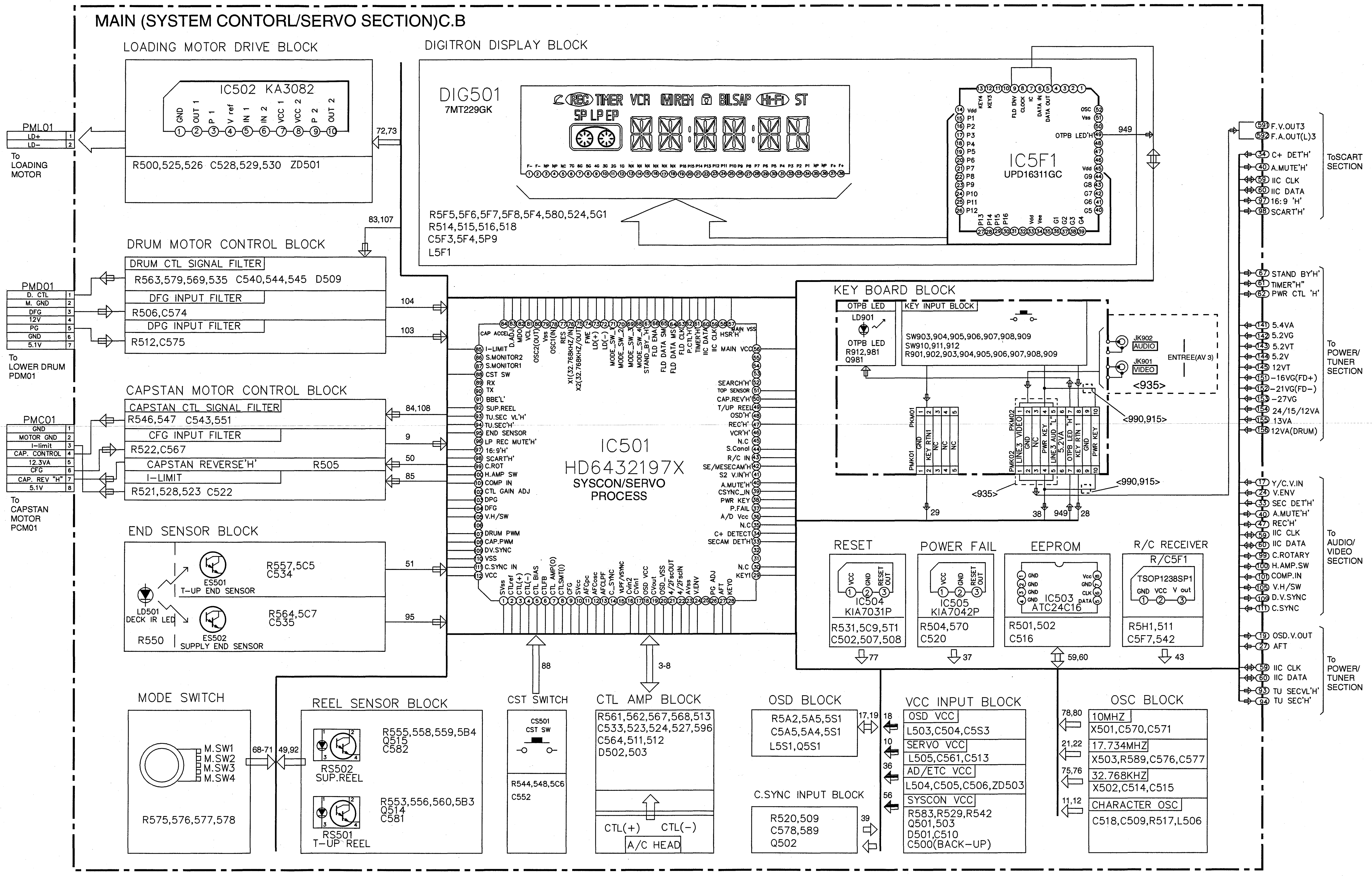


TU701
ENTREE ANTENNE
SORTIE ANTENNE
1 BB
2 A.in
3 SDA
4 MB
5 SCL
6 V.in
7 MD TU
8 RF AGC
9 NC
10 AS
11 SCL
12 SDA
13 B+
14 B+
15 NC
16 TU
17 TP
18 IF
19 SW 1
20 SW 2
21 A.out
22 SIF
23 AFT
24 V.out
25 NC
RF AGC
Q7S1,R7S1,
C7S1,C703
To SYSTEM CONTROL/ SERVO SECTION
60 SDA
59 SCL
94 Tu SECVL'H'
93 TU SEC 'H'
To POWER SECTION
33VT
143 5.2VT
141 5.4VA
IC751
MSP3417
NICAM/A2 BLOCK
1 AVSUP
2 ANA_IN+
3 ANA_IN-
4 TESTEN
5 XTAL_IN
6 XTAL_OUT
7 TP
8 D_CTR_OUT1
9 D_CTR_OUT0
10 ADR_SEL
11 STANDBYQ
12 I2C_CL
13 I2C_DA
14 TP
15 TP
16 TP
17 TP
18 TP
19 DVSUP
20 DVSS
21 TP
22 RESETQ
23 TP
24 TP
25 VREF2
26 DACM_R
27 DACM_L
28 TP
29 VREF1
30 SC1_OUT_R
31 SC1_OUT_L
32 NC
33 AHVSUP
34 CAPL_M
35 AHVSS
36 AGNDC
37 NC
38 NC
39 NC
40 SC1_IN_L
41 SC1_IN_R
42 VREFTOP
43 MONO_IN
44 AVSS
SCART Switching Facilities
D/A
D/A
A/D
A/D
D/A
D/A
SCART1 R
SCART1 L
SCARTL
SCARTR
IDENT
FM1/AM
FM2
NICAM A
NICAM B
LOUD-SPEAKER L
LOUD-SPEAKER R
DSP
Demodulator
Audio PLL
18.732MHz OSC
X751
<7750,5700>
FILTER
FILTER
TU.A.R 781
TU.A.L 782
To Hi-Fi AUDIO/ SCART SECTION
<990,935,915>
To POWER SECTION
5.2V 144
To SYSTEM CONTROL/ SERVO SECTION
AFT 27
TU.V.OUT 792
To Hi-Fi AUDIO/ SCART SECTION
:REC VIDEO SIGNAL
:REC AUDIO SIGNAL

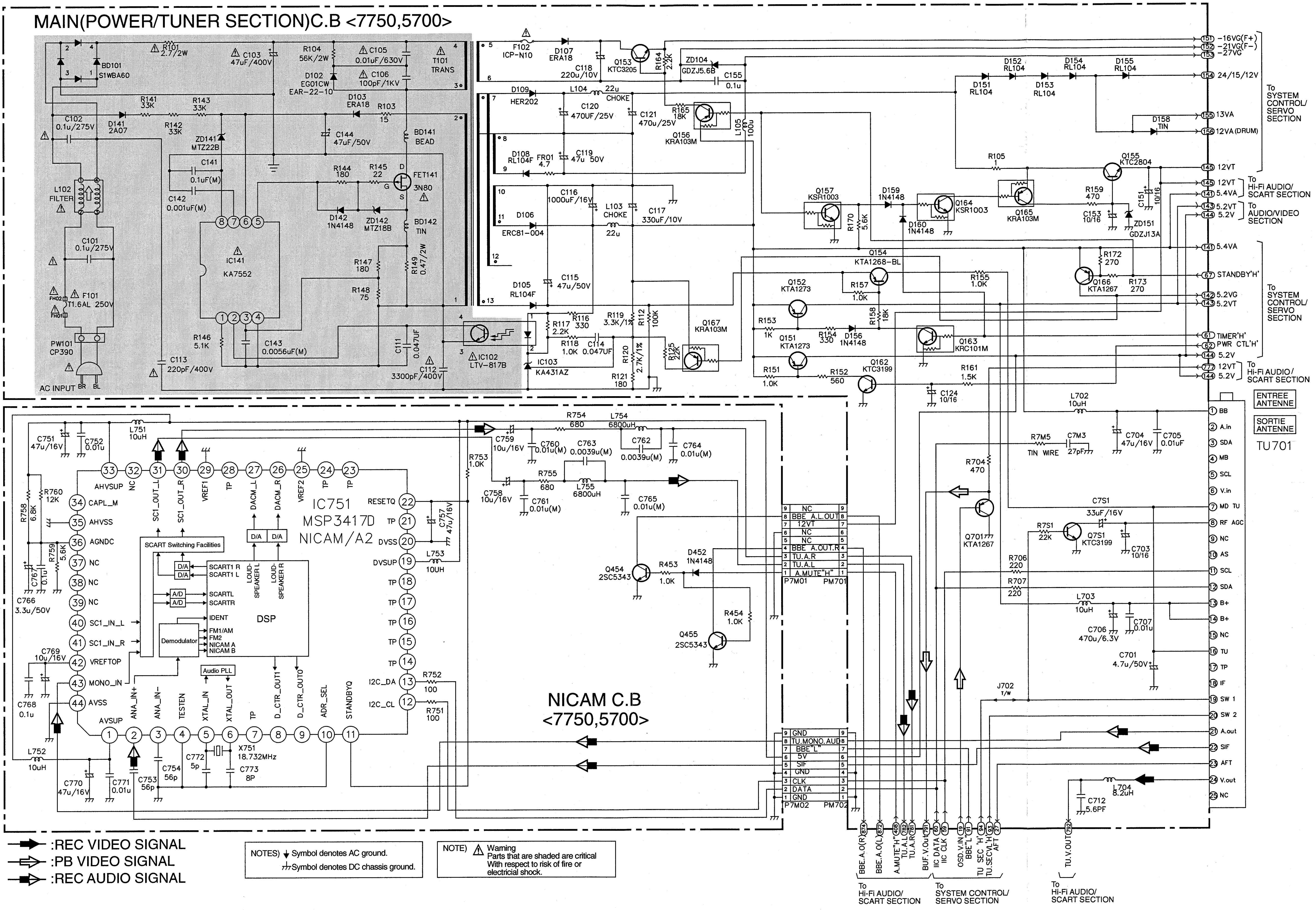
BLOCK DIAGRAM-7 (SYSTEM CONTROL/SERVO SECTION) <HV-FX7750/5700>


MAIN (SYSTEM CONTORL/SERVO SECTION)C.B
LOADING MOTOR DRIVE BLOCK
IC502 KA3082
GND OUT 1 P 1 V ref IN 1 IN 2 VCC 1 VCC 2 P 2 OUT 2
R500,525,526 C528,529,530 ZD501
PML01
LD+
LD-
To LOADING MOTOR
72,73
DIGITRON DISPLAY BLOCK
DIG501 9MT168GK
REC TIMER VCR MREM BILSAP Hi-Fi ST
SP LP EP
R5F5,5F6,5F7,5F8,5F4,580,524,5G1
R514,515,516,518
C5F3,5F4,5P9
L5F1
IC5F1
UPD16311GC
949
DRUM MOTOR CONTROL BLOCK
83,107
DRUM CTL SIGNAL FILTER
R563,579,569,535 C540,544,545 D509
DFG INPUT FILTER
R506,C574
DPG INPUT FILTER
R512,C575
104
103
PMD01
D. CTL
M. GND
DFG
12V
PG
GND
5.1V
To LOWER DRUM PDM01
CAPSTAN MOTOR CONTROL BLOCK
CAPSTAN CTL SIGNAL FILTER
R546,547 C543,551
CFG INPUT FILTER
R522,C567
CAPSTAN REVERSE'H' R505
I-LIMIT
R521,528,523 C522
84,108
9
50
85
PMC01
GND
MOTOR GND
I-limit
CAP. CONTROL
12.3VA
CFG
CAP. REV "H"
5.1V
To CAPSTAN MOTOR PCM01
END SENSOR BLOCK
ES501 T-UP END SENSOR
R557,5C5 C534
LD501 DECK IR LED
ES502 SUPPLY END SENSOR
R564,5C7 C535
R550
51
95
IC501
HD6432197X
SYSCON/SERVO PROCESS
I-LIMIT
S.MONITOR2
S.MONITOR1
CST SW
RX
TX
BBE'L'
SUP.REEL
TU.SEC VL'H'
TU.SEC'H'
END SENSOR
LP REC MUTE'H'
16:9'H'
SCART'H'
C.ROT
H.AMP SW
COMP IN
CTL GAIN ADJ
DPG
DFG
V.H/SW
A.H/SW
DRUM PWM
CAP.PWM
DV.SYNC
VSS
C.SYNC IN
VCC
HSR'H'
MAIN VCC
PLUS2 DATA
SEARCH'H'
TOP SENSOR
CAP.REV'H'
T/UP REEL
OSD'H'
REC'H'
VCR'H'
N.C
S.Conal
R/C IN
SE/MESECAM'H'
S2 V.IN'H'
A.MUTE'H'
CSYNC_IN
PWR KEY
P.FAIL
A/D Vcc
N.C
C+ DETECT
SECAM DET'H'
A.LEVEL(R)
A.LEVEL(L)
N.C
KEY1
KEY BOARD BLOCK
OTPB LED
LED902
OTPB LED R912,981 Q981
KEY INPUT BLOCK
SW901,902,903,904,905,906,907,908,909
SW910,911
R901,902,903,904,905,906,908,909
JK903 AUDIO-G
JK902 AUDIO-D ENTREE(AV 3)
JK901 VIDEO
<7750>
<5700>
PKM01
GND KEY RTN1 NC NC
PMK01
PKM02
LINE2 VIDEO LINE2 AUD "L" LINE2 AUD "R" PWR KEY 5.2VA OTPB LED "H" KEY RTN 1 GND PWR KEY
PMK02
<7750>
<5700>
29
38 949 28
F.V.OUT3
F.A.OUT(L)3
F.A.OUT(R)3
A.ENV
A.LEVEL(L)
A.LEVEL(R)
C+ DET'H'
A.MUTE'H'
IIC CLK
IIC DATA
A.H/SW
LP REC.M'H'
To Hi-Fi AUDIO SECTION
STAND BY'H'
TIMER"H"
PWR CTL 'H'
5.4VA
5.2VG
5.2VT
5.2V
12VT
-16VG(FD+)
-21VG(FD-)
-27VG
24/15/12VA
13VA
12VA(DRUM)
To POWER/ TUNER SECTION
Y/C.V.IN
V.ENV
SEC DET'H'
A.MUTE'H'
REC'H'
IIC CLK
IIC DATA
C.ROTARY
H.AMP.SW
COMP.IN
V.H/SW
D.V.SYNC
C.SYNC
To AUDIO/ VIDEO SECTION
OSD.V.OUT
AFT
IIC CLK
IIC DATA
BBE'H'
TU SECVL'H'
TU SEC'H'
To POWER/ TUNER SECTION
RESET
IC504 KIA7031P
R531,5C9,5T1 C502,507,508
77
POWER FAIL
IC505 KIA7042P
R504,570 C520
37
EEPROM
IC503 ATC24C16
R501,502 C516
59,60
R/C RECEIVER
R/C5F1
TSOP1238SP1
GND VCC V out
R5H1,511 C5F7,542
43
MODE SWITCH
M.SW1
M.SW2
M.SW3
M.SW4
R575,576,577,578
68-71
49,92
REEL SENSOR BLOCK
RS502 SUP.REEL
R555,558,559,5B4 Q515 C582
RS501 T-UP REEL
R553,556,560,5B3 Q514 C581
CST SWITCH
CS501 CST SW
R544,548,5C6 C552
88
CTL AMP BLOCK
3-8
R561,562,567,568,513 C533,523,524,527,596 C564,511,512 D502,503
CTL(+) CTL(-)
A/C HEAD
OSD BLOCK
R5A5,5S1 C5S1 L5S1,Q5S1
17,19
C.SYNC INPUT BLOCK
R520,509 C578,589 Q502
39
VCC INPUT BLOCK
18
OSD VCC
L503,C504,C5S3
10
SERVO VCC
L505,C561,C513
36
AD/ETC VCC
L504,C505,C506,ZD503
56
SYSCON VCC
R583,R529,R542 Q501,503 D501,C510 C500(BACK-UP)
OSC BLOCK
78,80
10MHZ
X501,C570,C571
21,22
17.734MHZ
X503,R589,C576,C577
75,76
32.768KHZ
X502,C514,C515
11,12
CHARACTER OSC
C518,C509,R517,L506

BLOCK DIAGRAM-8 (SYSTEM CONTROL/SERVO SECTION) <HV-FX990/GX935/GX915>


MAIN (SYSTEM CONTORL/SERVO SECTION)C.B
LOADING MOTOR DRIVE BLOCK
IC502 KA3082
GND OUT 1 P 1 V ref IN 1 IN 2 VCC 1 VCC 2 P 2 OUT 2
R500,525,526 C528,529,530 ZD501
PML01
LD+
LD−
To LOADING MOTOR
72,73
83,107
DIGITRON DISPLAY BLOCK
DIG501
7MT229GK
REC TIMER VCR REM BILSAP Hi-Fi ST
SP LP EP
R5F5,5F6,5F7,5F8,5F4,580,524,5G1
R514,515,516,518
C5F3,5F4,5P9
L5F1
IC5F1
UPD16311GC
OTPB LED'H'
949
DRUM MOTOR CONTROL BLOCK
DRUM CTL SIGNAL FILTER
R563,579,569,535 C540,544,545 D509
DFG INPUT FILTER
R506,C574
DPG INPUT FILTER
R512,C575
104
103
PMD01
D. CTL
M. GND
DFG
12V
PG
GND
5.1V
To LOWER DRUM PDM01
CAPSTAN MOTOR CONTROL BLOCK
CAPSTAN CTL SIGNAL FILTER
R546,547 C543,551
CFG INPUT FILTER
R522,C567
CAPSTAN REVERSE'H'
R505
I-LIMIT
R521,528,523 C522
84,108
9
50
85
PMC01
GND
MOTOR GND
I-limit
CAP. CONTROL
12.3VA
CFG
CAP. REV "H"
5.1V
To CAPSTAN MOTOR PCM01
END SENSOR BLOCK
R557,5C5
C534
ES501
T-UP END SENSOR
LD501
DECK IR LED
R564,5C7
C535
ES502
SUPPLY END SENSOR
R550
51
95
IC501
HD6432197X
SYSCON/SERVO PROCESS
KEY BOARD BLOCK
OTPB LED
LD901
OTPB LED
R912,981
Q981
KEY INPUT BLOCK
SW903,904,905,906,907,908,909
SW910,911,912
R901,902,903,904,905,906,907,908,909
JK902 AUDIO
JK901 VIDEO
ENTREE(AV 3)
<935>
PKM01
PKM02
<990,915>
<935>
29
38
949
28
RESET
IC504
KIA7031P
R531,5C9,5T1
C502,507,508
77
POWER FAIL
IC505
KIA7042P
R504,570
C520
37
EEPROM
IC503
ATC24C16
R501,502
C516
59,60
R/C RECEIVER
R/C5F1
TSOP1238SP1
GND VCC V out
R5H1,511
C5F7,542
43
88
3-8
MODE SWITCH
M.SW1
M.SW2
M.SW3
M.SW4
R575,576,577,578
68-71
49,92
REEL SENSOR BLOCK
RS502
SUP.REEL
R555,558,559,5B4
Q515
C582
RS501
T-UP REEL
R553,556,560,5B3
Q514
C581
CST SWITCH
CS501
CST SW
R544,548,5C6
C552
CTL AMP BLOCK
R561,562,567,568,513
C533,523,524,527,596
C564,511,512
D502,503
CTL(+)
CTL(−)
A/C HEAD
OSD BLOCK
R5A2,5A5,5S1
C5A5,5A4,5S1
L5S1,Q5S1
17,19
C.SYNC INPUT BLOCK
R520,509
C578,589
Q502
39
VCC INPUT BLOCK
18
OSD VCC
L503,C504,C5S3
10
SERVO VCC
L505,C561,C513
36
AD/ETC VCC
L504,C505,C506,ZD503
56
SYSCON VCC
R583,R529,R542
Q501,503
D501,C510
C500(BACK-UP)
OSC BLOCK
78,80
10MHZ
X501,C570,C571
21,22
17.734MHZ
X503,R589,C576,C577
75,76
32.768KHZ
X502,C514,C515
11,12
CHARACTER OSC
C518,C509,R517,L506
F.V.OUT3
F.A.OUT(L)3
C+ DET'H'
A.MUTE'H'
IIC CLK
IIC DATA
16:9 'H'
SCART'H'
ToSCART SECTION
STAND BY'H'
TIMER"H"
PWR CTL 'H'
5.4VA
5.2VG
5.2VT
5.2V
12VT
−16VG(FD+)
−21VG(FD−)
−27VG
24/15/12VA
13VA
12VA(DRUM)
To POWER/ TUNER SECTION
Y/C.V.IN
V.ENV
SEC DET'H'
A.MUTE'H'
REC'H'
IIC CLK
IIC DATA
C.ROTARY
H.AMP.SW
COMP.IN
V.H/SW
D.V.SYNC
C.SYNC
To AUDIO/ VIDEO SECTION
OSD.V.OUT
AFT
IIC CLK
IIC DATA
TU SECVL'H'
TU SEC'H'
To POWER/ TUNER SECTION

SCHEMATIC DIAGRAM-1 (POWER/TUNER/NICAM SECTION) <HV-FX7750/5700>


MAIN(POWER/TUNER SECTION)C.B <7750,5700>
BD101 S1WBA60
R101 2.7/2W
C103 47uF/400V
R104 56K/2W
C105 0.01uF/630V
D102 EG01CW EAR-22-10
C106 100pF/1KV
T101 TRANS
R141 33K
R143 33K
R142 33K
D103 ERA18
R103 15
C102 0.1u/275V
D141 2A07
ZD141 MTZ22B
C144 47uF/50V
BD141 BEAD
C141 0.1uF(M)
C142 0.001uF(M)
R144 180
R145 22
FET141 3N80
L102 FILTER
D142 1N4148
ZD142 MTZ18B
BD142 TIN
C101 0.1u/275V
IC141 KA7552
R147 180
R149 0.47/2W
R148 75
F101 T1.6AL 250V
FH02 FH01
R146 5.1K
C143 0.0056uF(M)
C111 0.047UF
PW101 CP390
C113 220pF/400V
IC102 LTV-817B
C112 3300pF/400V
AC INPUT BR BL
F102 ICP-N10
D107 ERA18
C118 220u/10V
Q153 KTC3205
R164 2.2K
ZD104 GDZJ5.6B
C155 0.1u
D109 HER202
L104 22u CHOKE
C120 470UF/25V
C121 470u/25V
R165 18K
Q156 KRA103M
L105 100u
D108 RL104F
FR01 4.7
C119 47u 50V
C116 1000uF/16V
L103 CHOKE 22u
C117 330uF/10V
D106 ERC81-004
D105 RL104F
C115 47u/50V
R117 2.2K
R116 330
R119 3.3K/1%
R112 100K
R118 1.0K
C114 0.047UF
R120 2.7K/1%
R121 180
IC103 KA431AZ
Q167 KRA103M
R125 22K
D152 RL104
D154 RL104
D155 RL104
D151 RL104
D153 RL104
D158 TIN
R105
Q155 KTC2804
Q157 KSR1003
D159 1N4148
Q164 KSR1003
Q165 KRA103M
R159 470
C153 10/16
C151 10/16
ZD151 GDZJ13A
R170 5.6K
D160 1N4148
Q154 KTA1268-BL
R172 270
Q152 KTA1273
R157 1.0K
R155 1.0K
Q166 KTA1267
R173 270
R153 1K
R158 18K
Q151 KTA1273
R154 330
D156 1N4148
Q163 KRC101M
R151 1.0K
R152 560
Q162 KTC3199
R161 1.5K
C124 10/16
151 -16VG(F+)
152 -21VG(F-)
153 -27VG
154 24/15/12V
155 13VA
156 12VA(DRUM)
To SYSTEM CONTROL/ SERVO SECTION
145 12VT
145 12VT
141 5.4VA
To Hi-Fi AUDIO/ SCART SECTION
143 5.2VT
144 5.2V
To AUDIO/VIDEO SECTION
141 5.4VA
67 STANDBY'H'
142 5.2VG
143 5.2VT
To SYSTEM CONTROL/ SERVO SECTION
61 TIMER'H'
62 PWR CTL'H'
144 5.2V
777 12VT
144 5.2V
To Hi-Fi AUDIO/ SCART SECTION
ENTREE ANTENNE
SORTIE ANTENNE
TU701
1 BB
2 A.in
3 SDA
4 MB
5 SCL
6 V.in
7 MD TU
8 RF AGC
9 NC
10 AS
11 SCL
12 SDA
13 B+
14 B+
15 NC
16 TU
17 TP
18 IF
19 SW 1
20 SW 2
21 A.out
22 SIF
23 AFT
24 V.out
25 NC
L702 10uH
R7M5 TIN WIRE
C7M3 27pF
C704 47u/16V
C705 0.01uF
R704 470
Q701 KTA1267
C7S1 33uF/16V
R7S1 22K
Q7S1 KTC3199
C703 10/16
R706 220
R707 220
L703 10uH
C706 470u/6.3V
C707 0.01u
C701 4.7u/50V
J702 T/W
L704 8.2uH
C712 5.6PF
C751 47u/16V
C752 0.01u
L751 10uH
R754 680
L754 6800uH
C759 10u/16V
C760 0.01u(M)
C763 0.0039u(M)
C762 0.0039u(M)
C764 0.01u(M)
R753 1.0K
R755 680
L755 6800uH
C758 10u/16V
C761 0.01u(M)
C765 0.01u(M)
R760 12K
R758 6.8K
R759 5.6K
C767 0.1u
C766 3.3u/50V
C769 10u/16V
C768 0.1u
L752 10uH
C770 47u/16V
C771 0.01u
C753 56p
C754 56p
C772 5p
X751 18.732MHz
C773 8P
IC751 MSP3417D NICAM/A2
AHVSUP CAPL_M AHVSS AGNDC NC NC NC SC1_IN_L SC1_IN_R VREFTOP MONO_IN AVSS AVSUP
NC SC1_OUT_L SC1_OUT_R VREF1 TP DACM_L DACM_R VREF2 TP TP
RESETQ TP DVSS DVSUP TP TP TP TP TP I2C_DA I2C_CL
ANA_IN+ ANA_IN- TESTEN XTAL_IN XTAL_OUT TP D_CTR_OUT1 D_CTR_OUT0 ADR_SEL STANDBYQ
SCART Switching Facilities
D/A D/A
SCART1 R SCART1 L
SCARTL SCARTR
A/D A/D
IDENT
FM1/AM FM2 NICAM A NICAM B
Demodulator
DSP
LOUD-SPEAKER L LOUD-SPEAKER R
Audio PLL
C757 47u/16V
L753 10UH
R752 100
R751 100
Q454 2SC5343
R453 1.0K
D452 1N4148
R454 1.0K
Q455 2SC5343
9 NC
8 BBE A.L.OUT
7 12VT
6 NC
5 NC
4 BBE A.OUT.R
3 TU.A.R
2 TU.A.L
1 A.MUTE"H"
P7M01 PM701
9 GND
8 TU.MONO.AUD
7 BBE"L"
6 5V
5 SIF
4 GND
3 CLK
2 DATA
1 GND
P7M02 PM702
NICAM C.B <7750,5700>
BBE.A.O(R)
BBE.A.O(L)
A.MUTE"H"
TU.A.L
TU.A.R
BUF.V.Out
IIC DATA
IIC CLK
OSD.V.IN
BBE'L'
TU SEC 'H'
TU.SECVL'H'
AFT
TU.V.OUT
To Hi-Fi AUDIO/ SCART SECTION
To SYSTEM CONTROL/ SERVO SECTION
To Hi-Fi AUDIO/ SCART SECTION

:REC VIDEO SIGNAL

:PB VIDEO SIGNAL

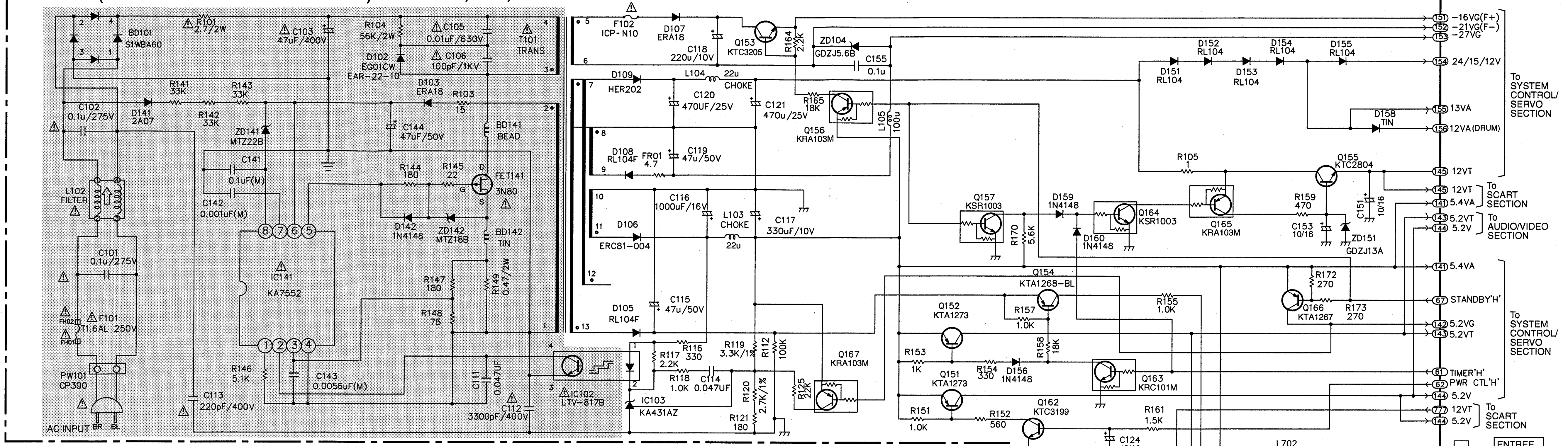
:REC AUDIO SIGNAL

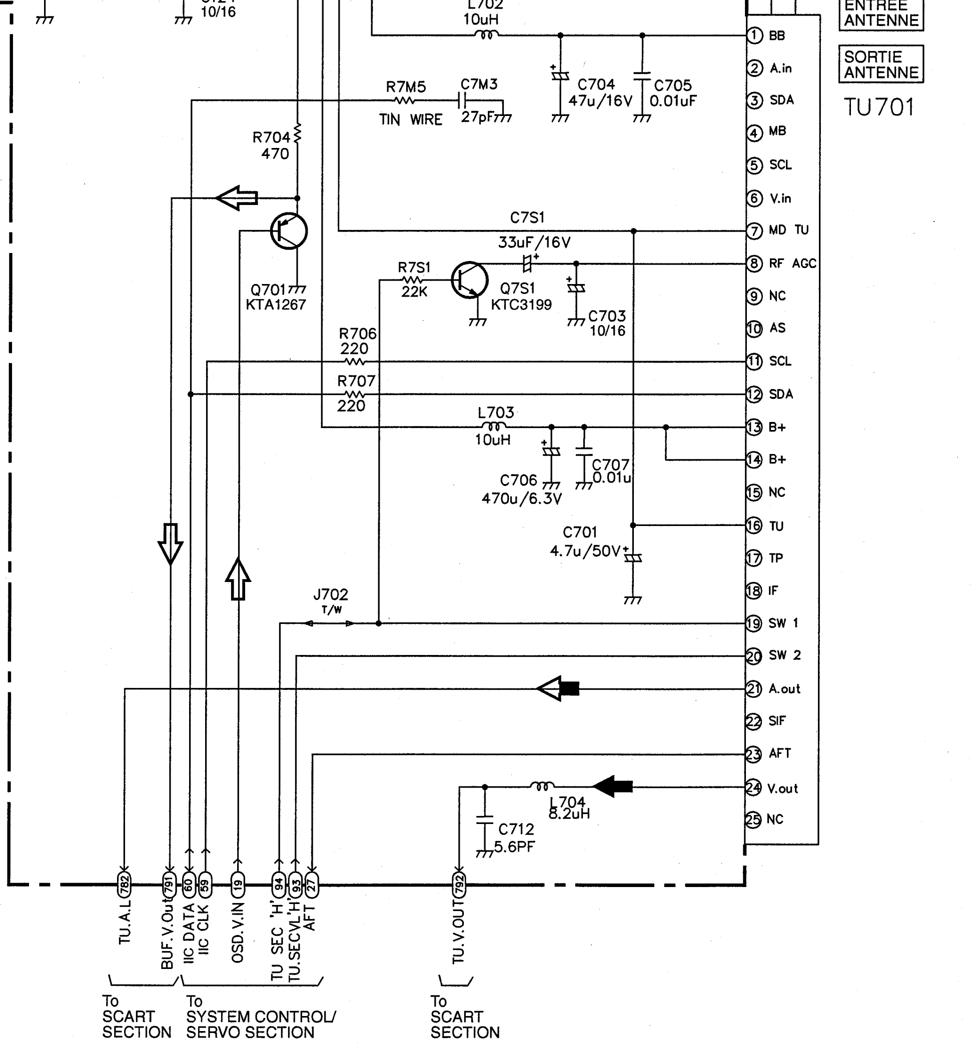
NOTES) ⏚ Symbol denotes AC ground.
⏚ Symbol denotes DC chassis ground.

NOTE) ⚠ Warning
Parts that are shaded are critical
With respect to risk of fire or
electricial shock.

SCHEMATIC DIAGRAM-2 (POWER/TUNER SECTION) <HV-FX990/GX935/915>

MAIN(POWER/TUNER SECTION)C.B <990,935,915>


BD101
S1WBA60
R101
2.7/2W
C103
47uF/400V
R104
56K/2W
C105
0.01uF/630V
T101
TRANS
D102
EG01CW
EAR-22-10
C106
100pF/1KV
R141
33K
R143
33K
D103
ERA18
R103
15
C102
0.1u/275V
D141
2A07
R142
33K
ZD141
MTZ22B
C144
47uF/50V
BD141
BEAD
C141
0.1uF(M)
C142
0.001uF(M)
R144
180
R145
22
FET141
3N80
D
G
S
L102
FILTER
D142
1N4148
ZD142
MTZ18B
BD142
TIN
C101
0.1u/275V
IC141
KA7552
R147
180
R149
0.47/2W
R148
75
F101
T1.6AL 250V
FH02
FH01
PW101
CP390
R146
5.1K
C143
0.0056uF(M)
C111
0.047UF
C113
220pF/400V
C112
3300pF/400V
IC102
LTV-817B
AC INPUT
BR
BL
F102
ICP-N10
D107
ERA18
C118
220u/10V
Q153
KTC3205
R164
2.2K
ZD104
GDZJ5.6B
C155
0.1u
D109
HER202
L104
22u
CHOKE
C120
470UF/25V
C121
470u/25V
R165
18K
Q156
KRA103M
L105
100u
D108
RL104F
FR01
4.7
C119
47u/50V
C116
1000uF/16V
L103
CHOKE
22u
C117
330uF/10V
D106
ERC81-004
D105
RL104F
C115
47u/50V
R117
2.2K
R116
330
R119
3.3K/1%
R112
100K
R118
1.0K
C114
0.047UF
R120
2.7K/1%
R125
22K
R121
180
IC103
KA431AZ
Q167
KRA103M
Q157
KSR1003
R170
5.6K
D159
1N4148
D160
1N4148
Q164
KSR1003
Q165
KRA103M
Q154
KTA1268-BL
Q152
KTA1273
R157
1.0K
R158
18K
R153
1K
R154
330
D156
1N4148
Q151
KTA1273
R151
1.0K
R152
560
Q162
KTC3199
Q163
KRC101M
R155
1.0K
R161
1.5K
C124
10/16
D151
RL104
D152
RL104
D153
RL104
D154
RL104
D155
RL104
D158
TIN
R105
1
Q155
KTC2804
R159
470
C153
10/16
C151
10/16
ZD151
GDZJ13A
R172
270
Q166
KTA1267
R173
270
151 -16VG(F+)
152 -21VG(F-)
153 -27VG
154 24/15/12V
155 13VA
156 12VA(DRUM)
145 12VT
To SYSTEM CONTROL/ SERVO SECTION
145 12VT
141 5.4VA
To SCART SECTION
143 5.2VT
144 5.2V
To AUDIO/VIDEO SECTION
141 5.4VA
67 STANDBY'H'
142 5.2VG
143 5.2VT
61 TIMER'H'
62 PWR CTL'H'
144 5.2V
To SYSTEM CONTROL/ SERVO SECTION
777 12VT
144 5.2V
To SCART SECTION


L702
10uH
ENTREE ANTENNE
SORTIE ANTENNE
TU701
R7M5
TIN WIRE
C7M3
27pF
C704
47u/16V
C705
0.01uF
R704
470
Q701
KTA1267
C7S1
33uF/16V
R7S1
22K
Q7S1
KTC3199
C703
10/16
R706
220
R707
220
L703
10uH
C706
470u/6.3V
C707
0.01u
C701
4.7u/50V
J702
T/W
L704
8.2uH
C712
5.6PF
1 BB
2 A.in
3 SDA
4 MB
5 SCL
6 V.in
7 MD TU
8 RF AGC
9 NC
10 AS
11 SCL
12 SDA
13 B+
14 B+
15 NC
16 TU
17 TP
18 IF
19 SW 1
20 SW 2
21 A.out
22 SIF
23 AFT
24 V.out
25 NC
782 TU.A.L
791 BUF.V.Out
60 IIC DATA
59 IIC CLK
19 OSD.V.IN
94 TU SEC 'H'
93 TU.SECVL'H'
27 AFT
792 TU.V.OUT
To SCART SECTION
To SYSTEM CONTROL/ SERVO SECTION
To SCART SECTION

➡ :REC VIDEO SIGNAL
⇨ :PB VIDEO SIGNAL
⇨ :REC AUDIO SIGNAL

NOTES) ⏚ Symbol denotes AC ground.
⫨ Symbol denotes DC chassis ground.

NOTE) ⚠ Warning
Parts that are shaded are critical
With respect to risk of fire or
electricial shock.

VOLTAGE CHART-1 (POWER SECTION)

IC102

	4	3
PB	4.0	0.0
REC	4.0	0.0

	1	2
PB	4.9	3.9
REC	4.9	4.0

IC141

	8	7	6	5
PB	3.5	2.0	17.2	3.7
REC	3.5	2.0	17.5	3.9

	1	2	3	4
PB	1.1	1.3	0.0	0.0
REC	1.1	1.3	0.0	0.0

IC103

	Gate		Anode		Cathode	
	PB	REC	PB	REC	PB	REC
IC103	2.5	2.5	0.0	0.0	3.9	3.9

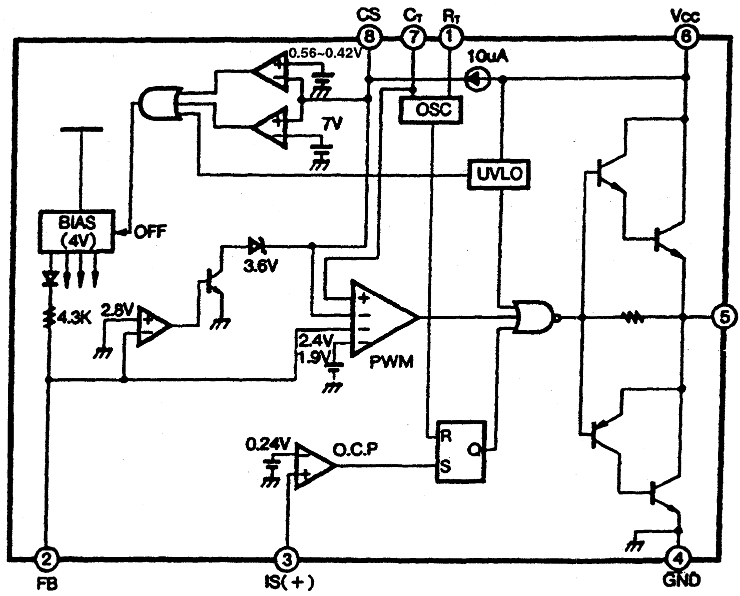
TRANSISTOR

	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q151	11.9	11.8	14.8	15.0	12.5	12.4
Q152	9.4	9.3	11.8	11.6	10.0	9.9
Q153	11.8	11.7	14.8	15.0	12.4	12.3
Q154	-27.3	-27.9	-27.3	-27.8	-26.6	-27.0
Q155	5.3	5.3	5.2	5.3	0.0	0.0
Q156	-16.1	-16.5	-16.0	-16.4	-15.4	-15.7
Q157	5.3	5.3	5.2	5.2	0.0	0.0
Q158	35.6	36.0	35.3	35.7	35.0	35.4
Q159	5.3	5.3	5.2	5.2	4.5	4.5
Q160	0.0	0.0	0.0	0.0	5.0	5.0
Q161	0.0	0.0	0.1	0.0	5.0	5.0
Q162	5.3	5.3	5.2	5.2	4.5	4.5
Q164	5.3	5.3	5.3	5.3	4.6	4.6
Q165	0.0	0.0	10.0	10.0	0.0	0.0

NOTE:
Voltage are DC-measured with a digital voltmeter during TUNER mode.

IC BLOCK DIAGRAM-1

IC, KA7552


CS
CT
RT
Vcc
8
7
1
6
0.56~0.42V
10uA
OSC
7V
UVLO
BIAS (4V)
OFF
3.6V
4.3K
2.8V
2.4V
1.9V
PWM
0.24V
O.C.P
R
S
Q
5 OUTPUT
2 FB
3 IS(+)
4 GND

VOLTAGE CHART-2 (AUDIO/VIDEO SECTION)

IC301

PIN	PB	REC	PIN	PB	REC	PIN	PB	REC	PIN	PB	REC	PIN	PB	REC
1	2.44	2.42	21	2.41	2.52	41	2.93	2.92	61	3.43	3.43	81	0	0
2	2.44	2.42	22	0	0	42	3.16	3.14	62	3.31	3.32	82	0.03	0.04
3	2.46	2.44	23	4.48	4.52	43	3.02	2.05	63	5	5	83	0	0
4	2.45	2.35	24	4.19	4.23	44	0	0	64	5	5	84	0.03	0.03
5	0.09	0.88	25	1.69	1.69	45	2.34	2.33	65	2.03	2.03	85	0.03	0.03
6	2.46	2.34	26	0.05	0.06	46	1.46	1.44	66	2.66	2.67	86	0	0
7	2.46	2.34	27	0.34	0.34	47	9.13	9.12	67	3.87	3.86	87	4.87	4.80
8	0	0	28	0.34	0.34	48	1.94	1.96	68	0	0	88	1.83	3.97
9	0	0	29	1.78	1.84	49	0.85	0.85	69	0.80	1.27	89	0	0
10	0.93	0.93	30	1.10	4.57	50	0	0	70	1.98	2.92	90	1.83	3.95
11	1.68	1.68	31	2.97	2.94	51	1.83	1.82	71	2.52	2.51	91	1.83	3.98
12	4.98	2.60	32	-	2.3	52	2.71	2.62	72	3.37	1.73	92	0.02	1.55
13	1.49	1.52	33	1.45	1.37	53	0	0	73	3.8	3.17	93	2.17	0.01
14	1.68	1.38	34	1.81	1.79	54	2.62	2.62	74	1.55	0.01	94	0	2.01
15	2.34	2.32	35	3.25	3.22	55	4.91	4.91	75	4.96	4.94	95	0	0
16	5.01	5.02	36	1.82	1.95	56	0.56	0.57	76	2.43	2.41	96	2.29	2.38
17	3.08	0.15	37	4.79	4.79	57	3.44	3.44	77	0.01	0.14	97	0	0
18	1.98	2.45	38	1.81	2.25	58	5.00	5.00	78	2.42	2.42	98	2.43	2.41
19	1.18	2.45	39	4.10	4.10	59	3.36	3.37	79	2.46	2.45	99	5.08	4.28
20	3.01	3.05	40	5.00	5.00	60	3.31	3.31	80	2.43	2.23	100	2.43	2.60

IC201

PIN	E	C	B
1	2.239	2.238	2.216
2	4.794	4.823	4.731
3	3.098	3.098	3.066
4	4.264	4.260	4.218
5	5.196	5.192	5.137
6	4.315	4.163	4.231
7	4.652	4.554	4.467
8	0.001	0.001	0.001
9	0.360	0.358	0.369
10	0.048	0.050	0.059
11	3.262	3.261	3.236
12	1.794	1.813	1.803
13	3.574	3.565	3.567
14	4.442	4.438	4.396
15	1.940	1.923	0.093
16	3.199	3.2	3.176
17	5.150	5.138	5.120
18	2.798	2.857	2.701
19	2.215	2.938	2.203
20	0.002	0.002	0.002
21	2.615	2.813	2.803
22	2.780	2.802	2.701
23	3.387	3.324	3.356
24	2.549	2.554	2.538

IC7V1

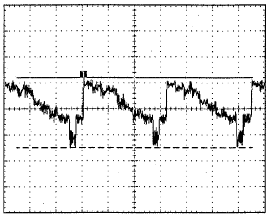
PIN	PB/ REC
1	0
2	2.6
3	5.1
4	5.1
5	0
6	4.8
7	4.9
8	5.1
9	4.7
10	0
11	2.2
12	2.2
13	0.9
14	0
15	5.1
16	3.0
17	2.6
18	4.7
19	5.1
20	5.0
21	0
22	4.5
23	5.1
24	0

TRANSISTOR

	PB mode			REC mode		
	E	C	B	E	C	B
Q301	1.213	3.930	1.864	1.783	3.348	2.435
Q302	1.548	5.158	2.191	1.813	5.147	2.452
Q303	2.151	0	1.499	2.147	0	1.494
Q304	1.217	5.061	1.835	1.216	5.039	1.824
Q305	2.383	0	1.705	2.420	0	1.749
Q306	1.222	0	0.546	1.221	0	0.557
Q307	5.258	0.280	5.176	5.186	3.301	4.352
Q308	0	0	0.744	15.827	0	-21.49
Q309	0	0	0.720	-5.69	0	-21.77
Q310	5.256	5.180	4.053	5.189	-21.64	5.148
Q311	1.224	3.923	1.872	0.271	3.190	0.636
Q3A1	0	5.251	0	1.258	5.179	1.766
Q201	1.313	5.135	1.924	0.625	5.115	0.092
Q202	1.314	5.135	1.237	0.624	5.120	1.219
Q203	0	1.924	0.016	0	0.092	5.111

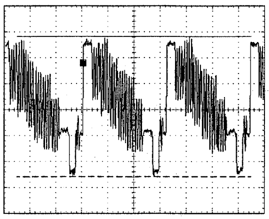
WAVEFORMS-1 (AUDIO/VIDEO SECTION)

①



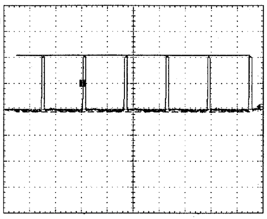
IC301 Pin⑳
500mVp-p
PB mode

②



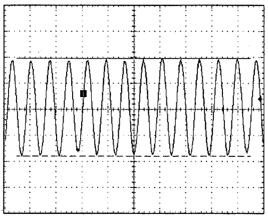
IC301 Pin㊳, ㉜, ㉛
1Vp-p
Video in

③



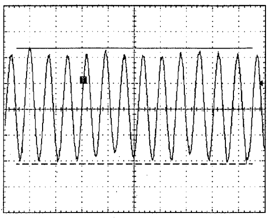
IC301 Pin㉘
4.2Vp-p
PB/REC modes

④



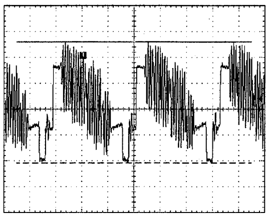
IC301Pin⑦
1.4Vp-p
REC mode

⑤



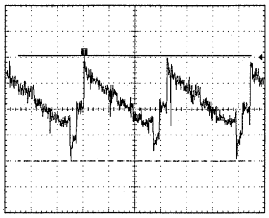
IC301 Pin⑥
2.2Vp-p
REC mode

⑥



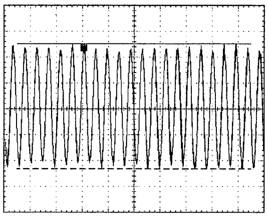
IC301 Pin㉙
2.1Vp-p
PB mode

⑦



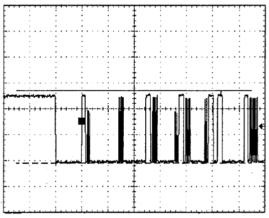
IC301 Pin㊶
400mVp-p
PB mode

⑧



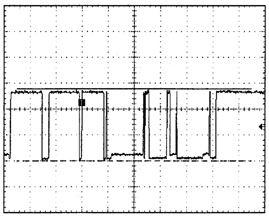
IC301 Pin(67)
600mVp-p
PB mode

⑨



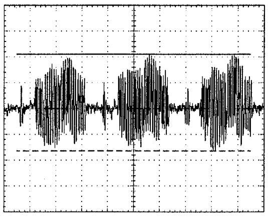
IC301 Pin㉓
5Vp-p
PB/REC modes

⑩



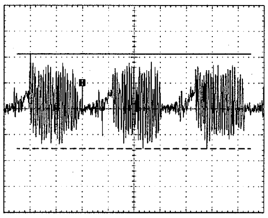
IC301 Pin㉔
5Vp-p
PB/REC modes

⑪



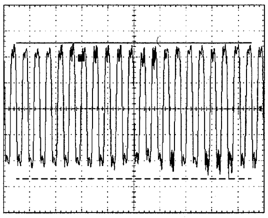
IC301 Pin(71), (72)
340mVp-p
REC mode

⑫



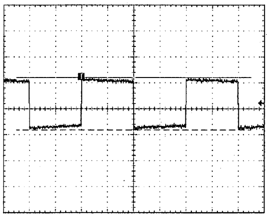
IC301 Pin(51), (52), (54)
300mVp-p
PB mode

⑬



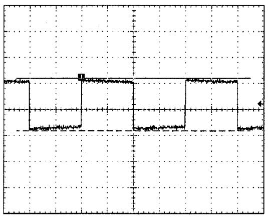
IC301 Pin(66)
600mVp-p
PB mode

⑭



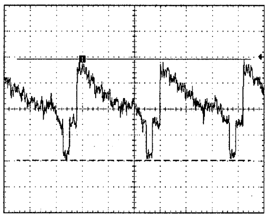
IC301 Pin⑪
3.2Vp-p
PB mode

⑮



IC301 Pin⑩
1.8Vp-p
PB mode

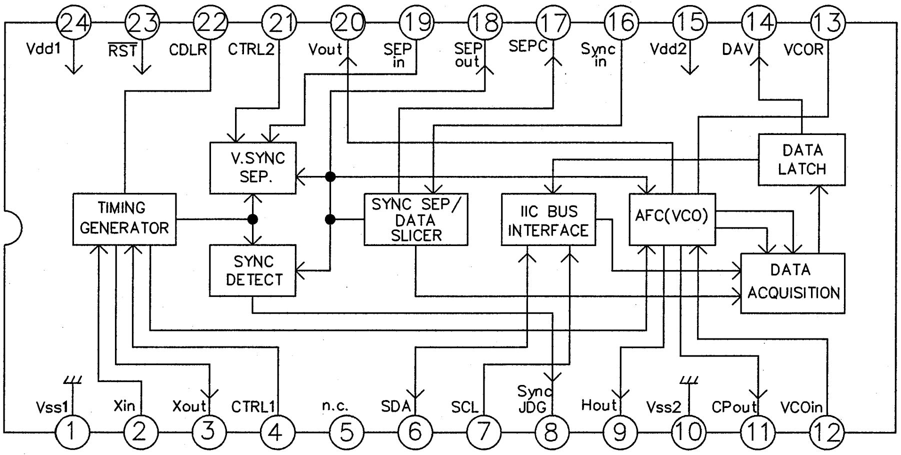
⑯



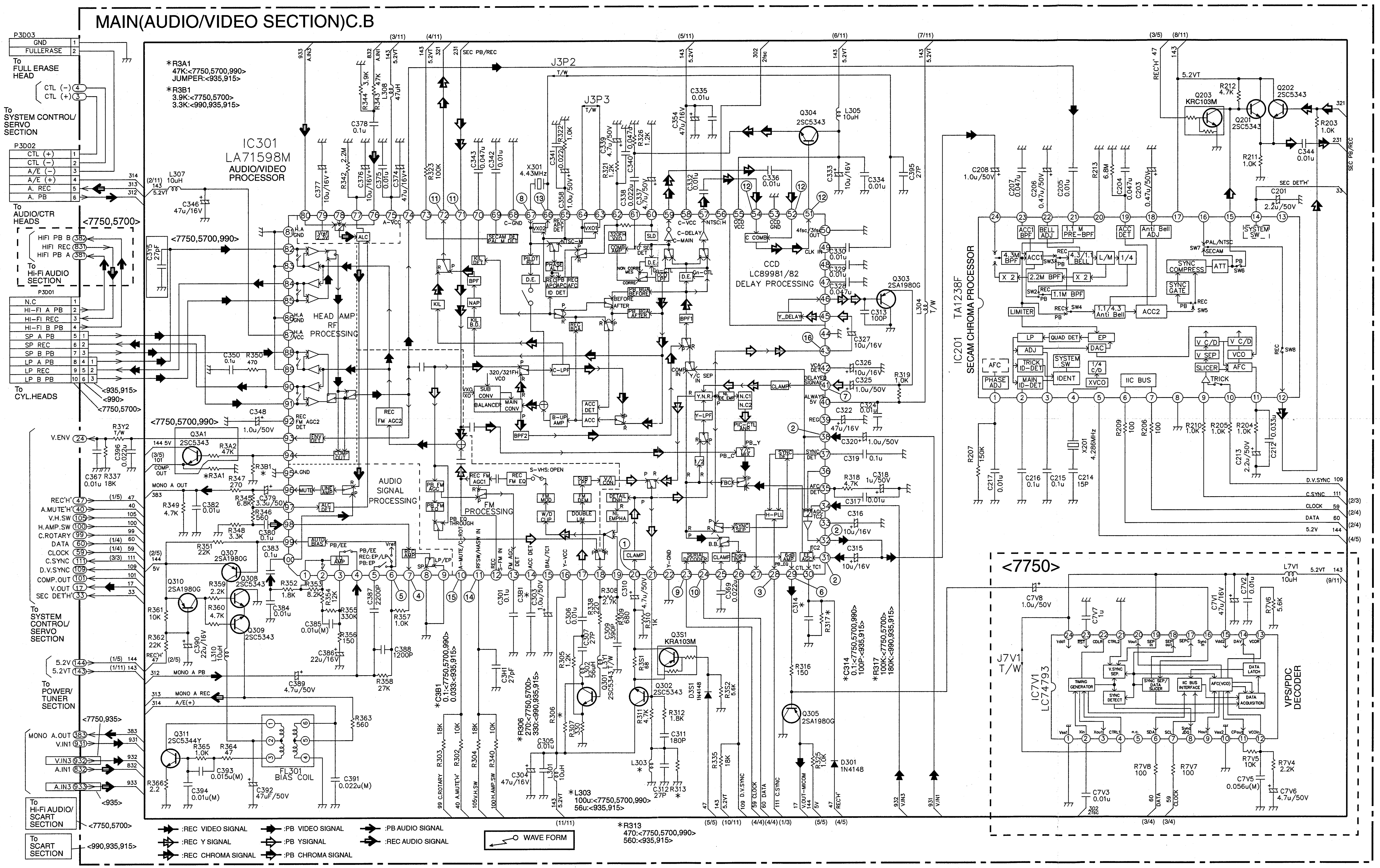
IC301 Pin㊸
400mVp-p
PB mode

IC BLOCK DIAGRAM-2

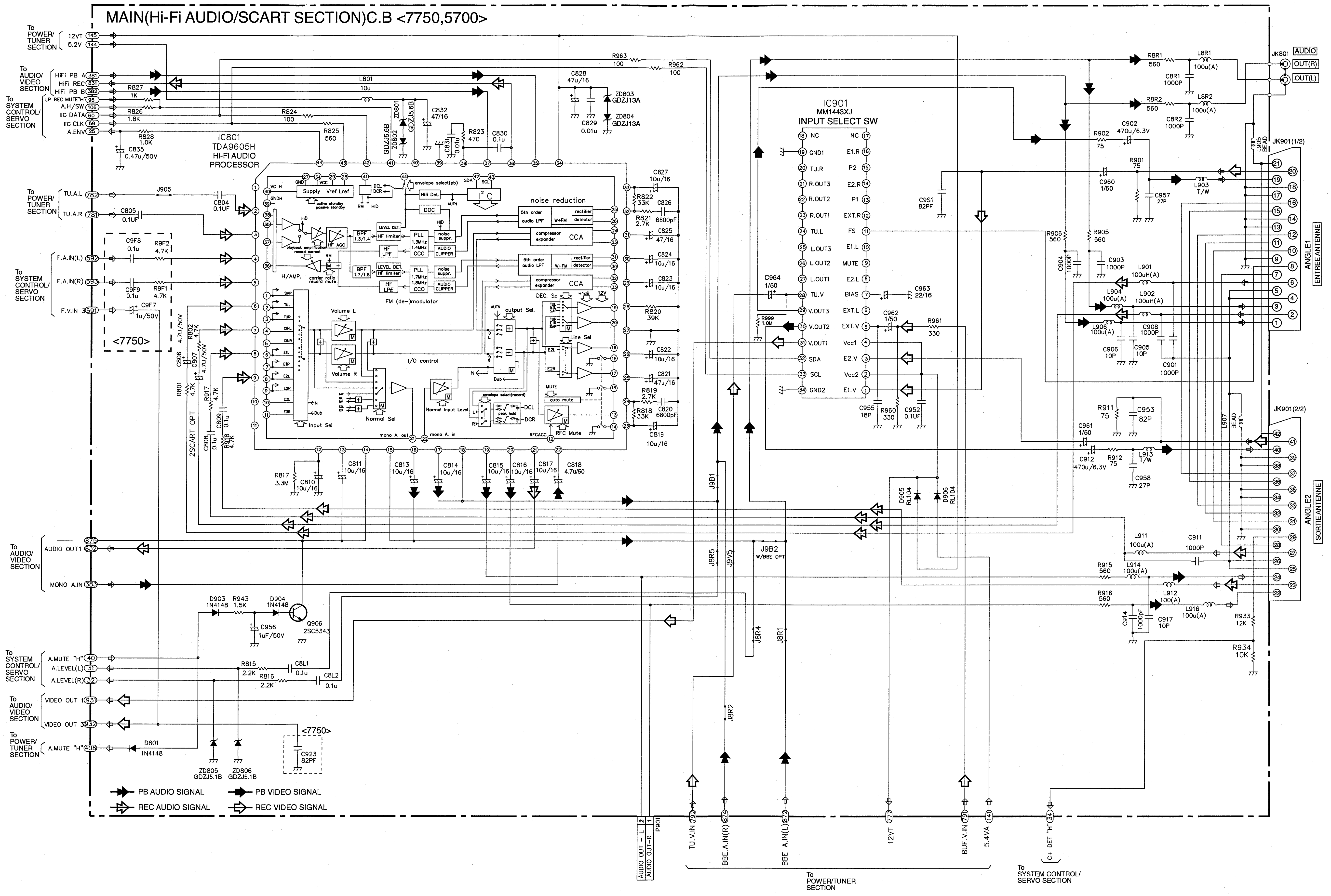
IC, LC74793


24
23
22
21
20
19
18
17
16
15
14
13
Vdd1
RST
CDLR
CTRL2
Vout
SEP in
SEP out
SEPC
Sync in
Vdd2
DAV
VCOR
V.SYNC SEP.
DATA LATCH
TIMING GENERATOR
SYNC SEP/ DATA SLICER
IIC BUS INTERFACE
AFC(VCO)
SYNC DETECT
DATA ACQUISITION
Vss1
Xin
Xout
CTRL1
n.c.
SDA
SCL
Sync JDG
Hout
Vss2
CPout
VCOin
1
2
3
4
5
6
7
8
9
10
11
12

SCHEMATIC DIAGRAM-3 (AUDIO/VIDEO SECTION)


MAIN(AUDIO/VIDEO SECTION)C.B
P3D03
GND
FULLERASE
To FULL ERASE HEAD
CTL (-)
CTL (+)
To SYSTEM CONTROL/ SERVO SECTION
P3D02
A/E (-)
A/E (+)
A. REC
A. PB
To AUDIO/CTR HEADS
<7750,5700>
HIFI PB B
HIFI REC
HIFI PB A
To Hi-Fi AUDIO SECTION
P3D01
N.C
HI-FI A PB
HI-FI REC
HI-FI B PB
SP A PB
SP REC
SP B PB
LP A PB
LP REC
LP B PB
To CYL.HEADS
<935,915>
<990>
<7750,5700>
*R3A1
47K:<7750,5700,990>
JUMPER:<935,915>
*R3B1
3.9K:<7750,5700>
3.3K:<990,935,915>
IC301
LA71598M
AUDIO/VIDEO PROCESSOR
<7750,5700,990>
HEAD AMP/ RF PROCESSING
AUDIO SIGNAL PROCESSING
FM PROCESSING
J3P2
J3P3
X301 4.43MHz
Q304 2SC5343
CCD
LC89981/82
DELAY PROCESSING
Q303 2SA1980G
IC201 TA1238F
SECAM CHROMA PROCESSOR
Q203 KRC103M
Q201 2SC5343
Q202 2SC5343
X201 4.286MHz
IIC BUS
V.ENV
Q3A1 2SC5343
REC'H'
A.MUTE'H'
V.H.SW
H.AMP.SW
C.ROTARY
DATA
CLOCK
C.SYNC
D.V.SYNC
COMP.OUT
V.OUT
SEC DET'H'
To SYSTEM CONTROL/ SERVO SECTION
5.2V
5.2VT
To POWER/ TUNER SECTION
<7750,935>
MONO A.OUT
V.IN1
V.IN3
A.IN1
A.IN3
<935>
To Hi-Fi AUDIO/ SCART SECTION
<7750,5700>
To SCART SECTION
<990,935,915>
Q310 2SA1980G
Q307 2SA1980G
Q308 2SC5343
Q309 2SC5343
Q311 2SC5344Y
FL301 BIAS COIL
Q301 2SC5343
Q302 2SC5343
Q3S1 KRA103M
D3S1 1N4148
Q305 2SA1980G
D301 1N4148
*L303
100u:<7750,5700,990>
56u:<935,915>
*R313
470:<7750,5700,990>
560:<935,915>
*C3B1
0.1:<7750,5700,990>
0.033:<935,915>
*R306
270:<7750,5700>
330:<990,935,915>
*C314
0.1:<7750,5700,990>
100P:<935,915>
*R317
100K:<7750,5700>
180K:<990,935,915>
<7750>
J7V1 T/W
IC7V1
LC74793
VPS/PDC DECODER
L7V1 10uH
:REC VIDEO SIGNAL
:REC Y SIGNAL
:REC CHROMA SIGNAL
:PB VIDEO SIGNAL
:PB YSIGNAL
:PB CHROMA SIGNAL
:PB AUDIO SIGNAL
:REC AUDIO SIGNAL
WAVE FORM

SCHEMATIC DIAGRAM-4 (Hi-Fi AUDIO/SCART SECTION) <HV-FX7750/5700>


MAIN(Hi-Fi AUDIO/SCART SECTION)C.B <7750,5700>
To POWER/ TUNER SECTION
12VT 145
5.2V 144
To AUDIO/ VIDEO SECTION
HiFi PB A 381
HiFi REC 831
HiFi PB B 382
To SYSTEM CONTROL/ SERVO SECTION
LP REC MUTE"H" 96
A.H/SW 106
IIC DATA 60
IIC CLK 59
A.ENV 25
R827 1K
R826 1.8K
R824 100
R825 560
R828 1.0K
C835 0.47u/50V
L801 10u
IC801
TDA9605H
Hi-Fi AUDIO PROCESSOR
ZD801 GDZJ5.6B
ZD802 GDZJ5.6B
C832 47/16
C831 0.01u
R823 470
C830 0.1u
C828 47u/16
C829 0.01u
ZD803 GDZJ13A
ZD804 GDZJ13A
R963 100
R962 100
To POWER/ TUNER SECTION
TU.A.L 782
TU.A.R 781
J905
C805 0.1UF
C804 0.1UF
C9F8 0.1u
R9F2 4.7K
C9F9 0.1u
R9F1 4.7K
C9F7 1u/50V
To SYSTEM CONTROL/ SERVO SECTION
F.A.IN(L) 592
F.A.IN(R) 593
F.V.IN 3591
<7750>
Supply
Vref Lref
active standby
passive standby
DCL
DCR
envelope select(pb)
Hifi Det.
DOC
I²C
SDA
SCL
noise reduction
5th order audio LPF
W+FM
rectifier
detector
compressor expander
CCA
H/AMP.
HF AGC
playback amplification record current
LEVEL DET.
HF limiter
BPF 1.3/1.4
BPF 1.7/1.8
HF LPF
PLL 1.3MHz 1.4MHz
PLL 1.7MHz 1.8MHz
CCO
noise suppr.
AUDIO CLIPPER
carrier ratio
record mute
FM (de-)modulator
Volume L
Volume R
I/O control
output Sel.
DEC. Sel
Line Sel
MUTE
auto mute
Normal Sel
Normal Input Level
envelope select(record)
peak hold
DCL
DCR
RFC Mute
RFCAGC
Input Sel
mono A. out
mono A. in
Dub
AUTN
R801 4.7K
R802 4.7K
C806 4.7U/50V
C807 4.7U/50V
R817 4.7K
2SCART OPT
C808 0.1u
C809 0.1u
R818 4.7K
C827 10u/16
R822 33K
C826 6800pF
R821 2.7K
C825 47/16
C824 10u/16
C823 10u/16
R820 39K
C822 10u/16
C821 47u/16
R819 2.7K
R818 33K
C820 6800pF
C819 10u/16
R817 3.3M
C810 10u/16
C811 10u/16
C813 10u/16
C814 10u/16
C815 10u/16
C816 10u/16
C817 10u/16
C818 4.7u/50
To AUDIO/ VIDEO SECTION
AUDIO OUT1 875 832
MONO A.IN 383
D903 1N4148
R943 1.5K
D904 1N4148
Q906 2SC5343
C956 1uF/50V
To SYSTEM CONTROL/ SERVO SECTION
A.MUTE "H" 40
A.LEVEL(L) 31
A.LEVEL(R) 32
R815 2.2K
R816 2.2K
C8L1 0.1u
C8L2 0.1u
To AUDIO/ VIDEO SECTION
VIDEO OUT 1 931
VIDEO OUT 3 932
To POWER/ TUNER SECTION
A.MUTE "H" 408
D801 1N4148
ZD805 GDZJ5.1B
ZD806 GDZJ5.1B
<7750>
C923 82PF
PB AUDIO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
REC VIDEO SIGNAL
IC901
MM1443XJ
INPUT SELECT SW
NC
GND1
TU.R
R.OUT3
R.OUT2
R.OUT1
TU.L
L.OUT3
L.OUT2
L.OUT1
TU.V
V.OUT3
V.OUT2
V.OUT1
SDA
SCL
GND2
E1.R
P2
E2.R
P1
EXT.R
FS
E1.L
MUTE
E2.L
BIAS
EXT.L
EXT.V
Vcc1
E2.V
Vcc2
E1.V
C9S1 82PF
C964 1/50
R999 1.0M
C963 22/16
C962 1/50
R961 330
C955 18P
R960 330
C952 0.1UF
J9B1
J9B2 W/BBE OPT
J8R5
J9V5
J8R4
J8R1
J8R2
D905 RL104
D906 RL104
R8R1 560
L8R1 100u(A)
C8R1 1000P
R8R2 560
L8R2 100u(A)
C8R2 1000P
JK801 AUDIO
OUT(R)
OUT(L)
R902 75
C902 470u/6.3V
L905 BEAD
JK901(1/2)
R901 75
C960 1/50
L903 T/W
C957 27P
R906 560
R905 560
C904 1000P
C903 1000P
L901 100uH(A)
L904 100u(A)
L902 100uH(A)
L906 100u(A)
C908 1000P
C906 10P
C905 10P
C901 1000P
ANGLE1 ENTREE ANTENNE
JK901(2/2)
R911 75
C953 82P
L907 BEAD
C961 1/50
C912 470u/6.3V
R912 75
L913 T/W
C958 27P
ANGLE2 SORTIE ANTENNE
L911 100u(A)
C911 1000P
R915 560
L914 100u(A)
R916 560
L912 100(A)
L916 100u(A)
C914 1000pF
C917 10P
R933 12K
R934 10K
P901
AUDIO OUT - L 2
AUDIO OUT - R 1
TU.V.IN 792
BBE.A.IN(R) 874
BBE.A.IN(L) 872
12VT 773
BUF.V.IN 791
5.4VA 141
C+ DET "H" 34
To POWER/TUNER SECTION
To SYSTEM CONTROL/ SERVO SECTION

VOLTAGE CHART-3
(Hi-Fi AUDIO/SCART SECTION)

IC801

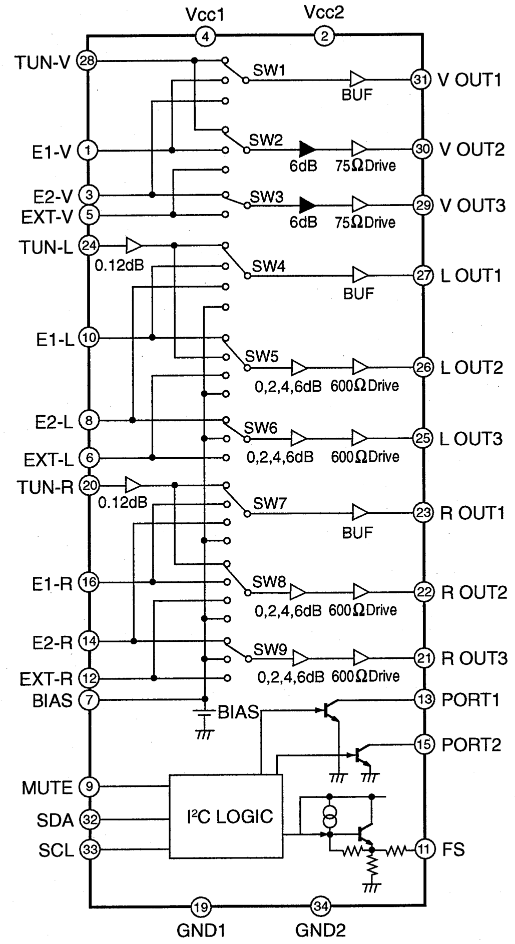
PB	3.6	4.4	4.2	0.9	5.1	0.0	0.0	0.7	0.6	0.7	11.9	3.9	3.9	3.9	0.8	3.9	3.9	0.0	0.8	3.9	3.9	3.9
REC	1.9	4.4	4.1	0.9	5.0	0.0	4.2	4.3	4.2	4.3	12.0	3.9	3.9	3.9	0.8	3.9	3.9	0.0	0.8	3.9	3.9	3.9
					40					35					30					25		
IC801(TDA9605H)																						
					5					10					15					20		
PB	3.8	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.8	3.8	0.0	3.9	0.0	0.0	6.0	6.0	0.0	6.0	6.0	4.5	3.8
REC	3.8	3.9	3.9	3.9	3.8	3.8	3.8	3.8	3.8	3.9	3.9	0.0	3.8	0.0	0.0	6.0	6.0	0.0	6.0	6.1	4.6	3.8

IC901

PB	0	4.8	4.7	3.8	1.5	1.5	3.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		0
REC	0	4.8	4.7	3.8	1.5	1.5	3.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5		0
					30					25					20		
IC901(MM1443)																	
					5					10					15		
PB	2.7	11.6	2.7	11.6	3.5	5.5	5.5	5.5	0	5.5	11.7	5.5	0	5.5	0	5.5	0
REC	2.7	11.6	2.7	11.6	3.5	5.5	5.5	5.5	0	5.5	11.7	5.5	0	5.5	0	5.5	0

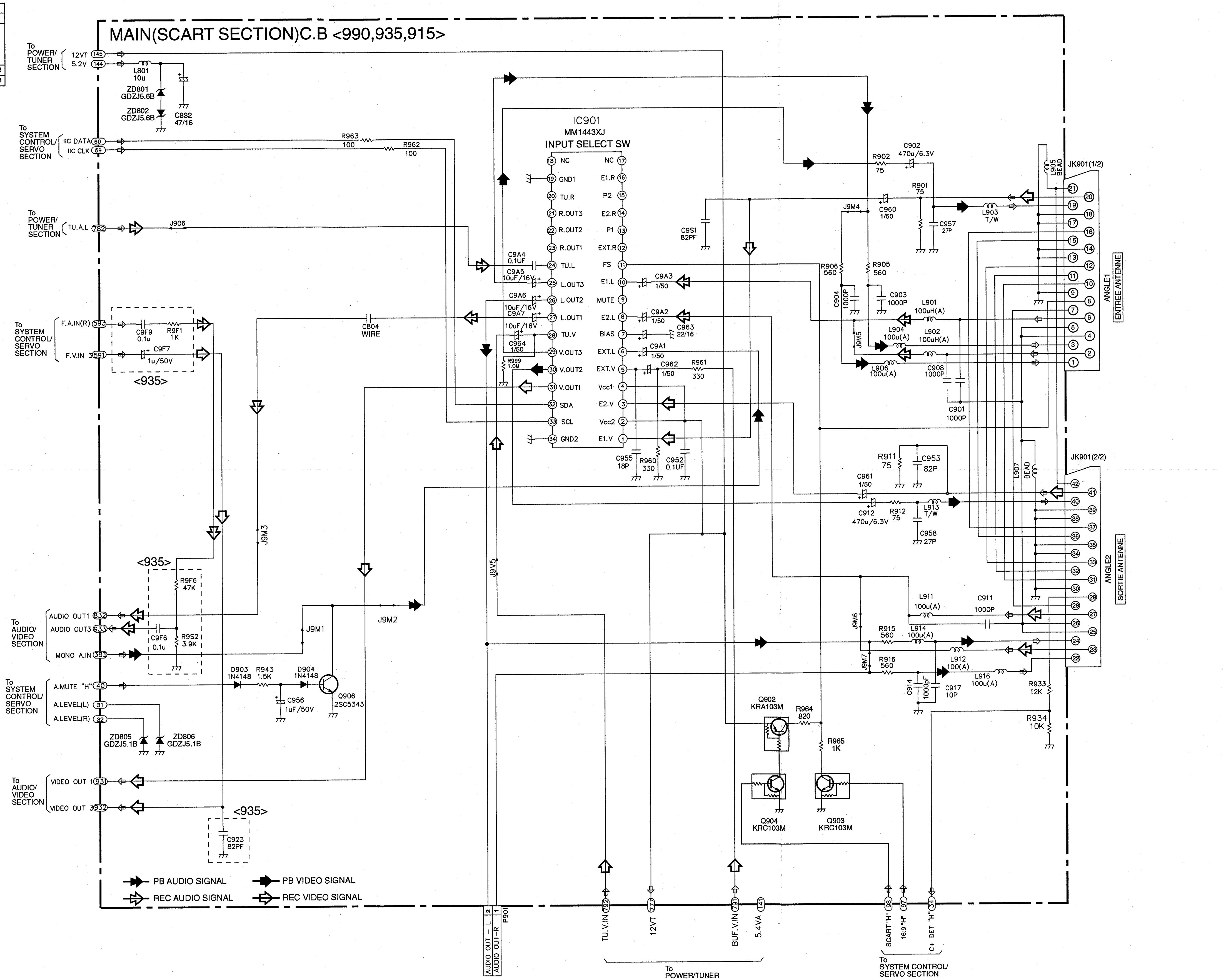
IC BLOCKDIAGRAM-3

IC, MM1443XJ



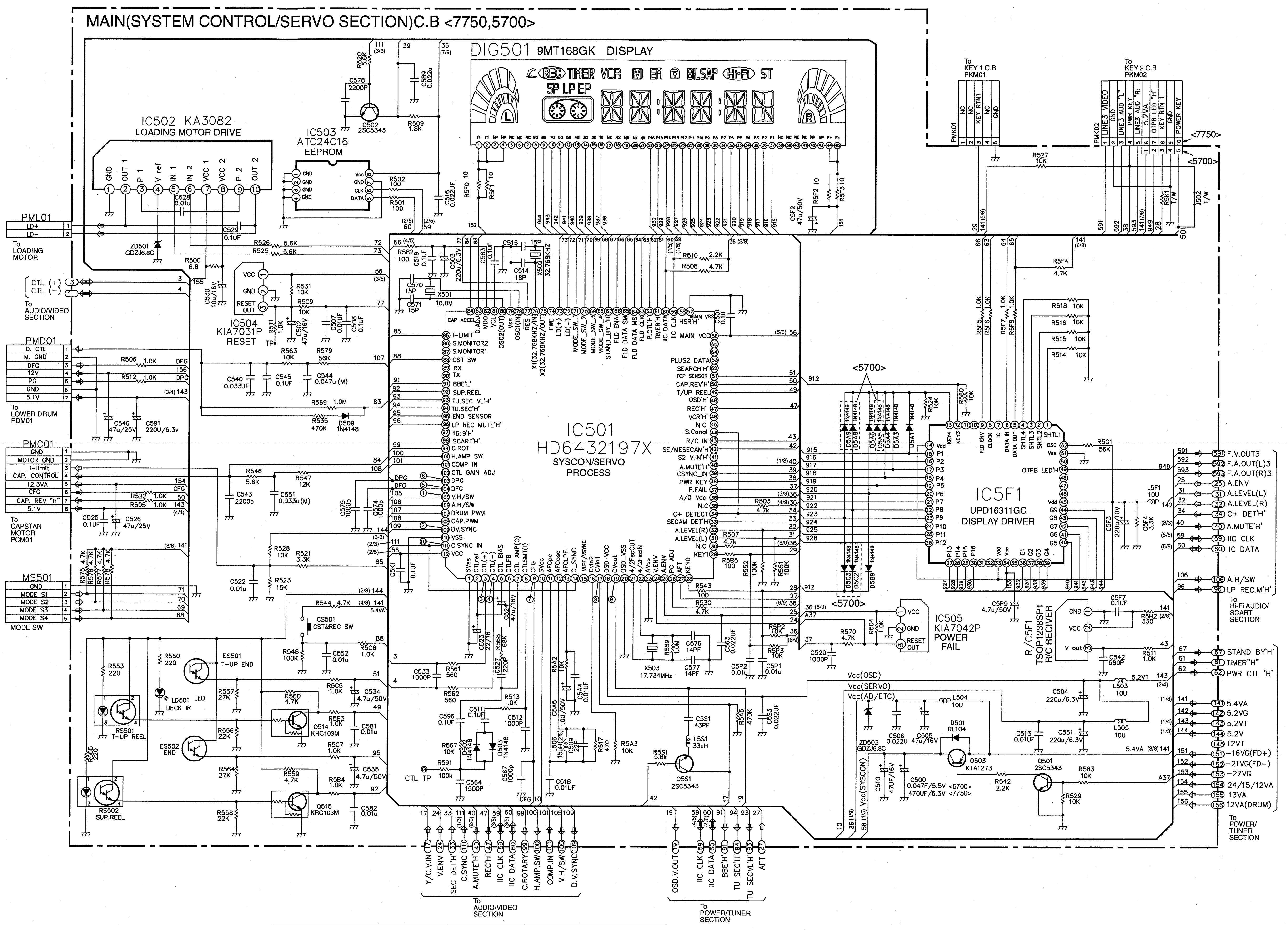
Vcc1
Vcc2
TUN-V 28
E1-V 1
E2-V 3
EXT-V 5
TUN-L 24
0.12dB
E1-L 10
E2-L 8
EXT-L 6
TUN-R 20
0.12dB
E1-R 16
E2-R 14
EXT-R 12
BIAS 7
MUTE 9
SDA 32
SCL 33
SW1
BUF
SW2
6dB 75Ω Drive
SW3
6dB 75Ω Drive
SW4
BUF
SW5
0,2,4,6dB 600Ω Drive
SW6
0,2,4,6dB 600Ω Drive
SW7
BUF
SW8
0,2,4,6dB 600Ω Drive
SW9
0,2,4,6dB 600Ω Drive
BIAS
I²C LOGIC
31 V OUT1
30 V OUT2
29 V OUT3
27 L OUT1
26 L OUT2
25 L OUT3
23 R OUT1
22 R OUT2
21 R OUT3
13 PORT1
15 PORT2
11 FS
19 GND1
34 GND2

SCHEMATIC DIAGRAM-5 (SCART SECTION) <HV-FX990/GX935/915>



MAIN(SCART SECTION)C.B <990,935,915>
To POWER/TUNER SECTION
12VT 145
5.2V 144
L801 10u
ZD801 GDZJ5.6B
ZD802 GDZJ5.6B
C832 47/16
To SYSTEM CONTROL/SERVO SECTION
IIC DATA 60
IIC CLK 59
R963 100
R962 100
TU.A.L 782
J906
IC901
MM1443XJ
INPUT SELECT SW
NC
GND1
TU.R
R.OUT3
R.OUT2
R.OUT1
TU.L
L.OUT3
L.OUT2
L.OUT1
TU.V
V.OUT3
V.OUT2
V.OUT1
SDA
SCL
GND2
E1.R
P2
E2.R
P1
EXT.R
FS
E1.L
MUTE
E2.L
BIAS
EXT.L
EXT.V
Vcc1
E2.V
Vcc2
E1.V
C9A4 0.1UF
C9A5 10uF/16V
C9A6 10uF/16V
C9A7 10uF/16V
C964 1/50
R999 1.0M
C9A3 1/50
C9A2 1/50
C963 22/16
C9A1 1/50
C962 1/50
R961 330
C9S1 82PF
C955 18P
R960 330
C952 0.1UF
C804 WIRE
F.A.IN(R) 593
F.V.IN 591
C9F9 0.1u
R9F1 1K
C9F7 1u/50V
<935>
R902 75
C902 470u/6.3V
R901 75
L905 BEAD
JK901(1/2)
J9M4
C960 1/50
C957 27P
L903 T/W
R906 560
R905 560
C904 1000P
C903 1000P
L901 100uH(A)
L904 100u(A)
L902 100uH(A)
J9M5
L906 100u(A)
C908 1000P
C901 1000P
ANGLE1 ENTREE ANTENNE
R911 75
C953 82P
C961 1/50
C912 470u/6.3V
R912 75
L913 T/W
C958 27P
L907 BEAD
JK901(2/2)
ANGLE2 SORTIE ANTENNE
L911 100u(A)
C911 1000P
J9M6
R915 560
L914 100u(A)
J9M7
R916 560
L912 100(A)
C914 1000P
C917 10P
L916 100u(A)
R933 12K
R934 10K
To AUDIO/VIDEO SECTION
AUDIO OUT1 832
AUDIO OUT3 833
MONO A.IN 383
R9F6 47K
C9F6 0.1u
R9S2 3.9K
J9M3
J9M1
J9M2
J9V5
To SYSTEM CONTROL/SERVO SECTION
A.MUTE "H" 40
A.LEVEL(L) 31
A.LEVEL(R) 32
ZD805 GDZJ5.1B
ZD806 GDZJ5.1B
D903 1N4148
R943 1.5K
D904 1N4148
Q906 2SC5343
C956 1uF/50V
Q902 KRA103M
R964 820
R965 1K
Q904 KRC103M
Q903 KRC103M
VIDEO OUT 1 931
VIDEO OUT 3 932
C923 82PF
PB AUDIO SIGNAL
REC AUDIO SIGNAL
PB VIDEO SIGNAL
REC VIDEO SIGNAL
AUDIO OUT-L 2
AUDIO OUT-R 1
P901
TU.V.IN 792
12VT 772
BUF.V.IN 791
5.4VA 141
To POWER/TUNER SECTION
SCART "H" 98
16:9 "H" 97
C+ DET "H" 34
To SYSTEM CONTROL/SERVO SECTION

SCHEMATIC DIAGRAM-6 (SYSTEM CONTROL/SERVO SECTION) <HV-FX7750/5700>


MAIN(SYSTEM CONTROL/SERVO SECTION)C.B <7750,5700>
DIG501 9MT168GK DISPLAY
REC TIMER VCR BILSAP Hi-Fi ST
SP LP EP
IC502 KA3082
LOADING MOTOR DRIVE
GND
OUT 1
P 1
V ref
IN 1
IN 2
VCC 1
VCC 2
P 2
OUT 2
IC503
ATC24C16
EEPROM
Q502
2SC5343
IC504
KIA7031P
RESET
IC501
HD6432197X
SYSCON/SERVO
PROCESS
IC5F1
UPD16311GC
DISPLAY DRIVER
IC505
KIA7042P
POWER
FAIL
R/C5F1
TSOP1238SP1
R/C RECIVER
X501
10.0M
X502
32.768KHZ
X503
17.734MHz
PML01
LD+
LD−
To LOADING MOTOR
CTL (+)
CTL (−)
To AUDIO/VIDEO SECTION
PMD01
D. CTL
M. GND
DFG
12V
PG
GND
5.1V
To LOWER DRUM PDM01
PMC01
GND
MOTOR GND
I-limit
CAP. CONTROL
12.3VA
CFG
CAP. REV "H"
5.1V
To CAPSTAN MOTOR PCM01
MS501
GND
MODE S1
MODE S2
MODE S3
MODE S4
MODE SW
CS501
CST&REC SW
ES501
T-UP END
ES502
END
LD501
LED
DECK IR
RS501
T-UP REEL
RS502
SUP.REEL
Q514
KRC103M
Q515
KRC103M
Q5S1
2SC5343
Q503
KTA1273
Q501
2SC5343
D501
RL104
ZD501
GDZJ6.8C
ZD503
GDZJ6.8C
D509
1N4148
CTL TP
To KEY 1 C.B PKM01
NC
NC
KEY RTN1
NC
GND
To KEY 2 C.B PKM02
LINE 3 VIDEO
GND
LINE 3 AUD "L"
PWR KEY
LINE 3 AUD "R"
5.2VA
OTPB LED "H"
KEY RTN 1
GND
POWER KEY
<7750>
<5700>
J502
T/W
F.V.OUT3
F.A.OUT(L)3
F.A.OUT(R)3
A.ENV
A.LEVEL(L)
A.LEVEL(R)
C+ DET'H'
A.MUTE'H'
IIC CLK
IIC DATA
A.H/SW
LP REC.M'H'
To Hi-Fi AUDIO/SCART SECTION
STAND BY'H'
TIMER"H"
PWR CTL 'H'
5.4VA
5.2VG
5.2VT
5.2V
12VT
−16VG(FD+)
−21VG(FD−)
−27VG
24/15/12VA
13VA
12VA(DRUM)
To POWER/TUNER SECTION
Vcc(OSD)
Vcc(SERVO)
Vcc(AD/ETC)
Vcc(SYSCON)
Y/C.V.IN
V.ENV
SEC DET'H
C.SYNC
A.MUTE'H
REC'H
IIC CLK
IIC DATA
C.ROTARY
H.AMP.SW
COMP.IN
V.H/SW
D.V.SYNC
To AUDIO/VIDEO SECTION
OSD.V.OUT
IIC CLK
IIC DATA
BBE'H
TU SEC'H
TU SECVL'H
AFT
To POWER/TUNER SECTION

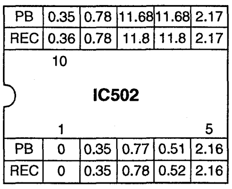
VOLTAGE CHART-4 (SYSTEM CONTROL/SERVO SECTION)

IC501

PIN	PB	REC	PIN	PB	REC	PIN	PB	REC	PIN	PB	REC	PIN	PB	REC	PIN	PB	REC
1	0	0	21	2.45	2.47	41	0	0	61	5.15	5.15	81	3.37	3.37	101	0	1.44
2	2.54	2.42	22	2.42	2.42	42	0	0	62	5.0	5.0	82	5.26	5.26	102	5.25	5.25
3	2.54	2.44	23	0	0	43	5.05	5.05	63	PULSE	PULSE	83	2.5	2.5	103	PULSE	PULSE
4	2.54	2.35	24	2.30	0	44	0	0	64	PULSE	PULSE	84	2.78	2.79	104	PULSE	PULSE
5	2.54	0.88	25	0.8 (MONO)	0	45	5.25	5.28	65	5.30	5.30	85	3.12	3.10	105	H/L	H/L
6	2.55	2.34	26	5.28	5.27	46	0	0	66	PULSE	PULSE	86	H/L	H/L	106	H/L	H/L
7	2.65	2.34	27	4.67	4.71	47	0	5.23	67	0.85	0.85	87	H/L	H/L	107	H/L	H/L
8	2.53	0	28	5.28	5.28	48	0	0	68	5.30	5.30	88	5.04/0	0	108	H/L	H/L
9	PULSE	0	29	5.28	5.28	49	H/L	H/L	69	0	0	89	0.33	0.30	109	0	0
10	5.11	0.93	30	5.25	5.28	50	0	0	70	5.30	5.31	90	0	0	110	0	0
11	1.91	1.68	31	*	*	51	0	0	71	5.30	5.31	91	5.23	5.23	111	PULSE	PULSE
12	1.92	2.60	32	*	*	52	0	0	72	5.20	5.20	92	H/L	H/L	112	5.26	5.26
13	2.23	1.52	33	0.47	0.44	53	0	0	73	5.20	5.20	93	0	0			
14	PULSE	PULSE	34	0	0	54	3.18	3.20	74	0	0	94	0	0			
15	0.37	2.32	35	5.28	5.28	55	5.25	5.25	75	1.57	1.58	95	0	0			
16	2.01	5.02	36	5.28	5.28	56	5.26	5.26	76	1.40	1.40	96	0	0			
17	2.41	0.15	37	4.86	4.86	57	0	0	77	5.25	5.25	97	0	0			
18	5.11	2.45	38	5.28	5.28	58	0	0	78	2.56	2.56	98	5.25	5.25			
19	2.48	2.45	39	2.17	2.18	59	PULSE	PULSE	79	0	0	99	H/L	H/L			
20	0	0	40	0	0	60	PULSE	PULSE	80	2.56	2.56	100	0(SP)/5.25(LP)				

- * 31, *32:Voltage level is different as the TAPE.
  * 88: CST TAB of thr TAPE: 0 VOLT
  NOCST TAB of the TAPE: 5.04 VOLT

IC502



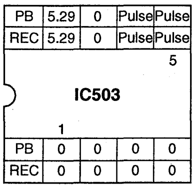
PB	0.35	0.78	11.68	11.68	2.17
REC	0.36	0.78	11.8	11.8	2.17

PB	0	0.35	0.77	0.51	2.16
REC	0	0.35	0.78	0.52	2.16

IC504

PIN	PB/REC
1	5.3
2	0
3	5.2

IC503



PB	5.29	0	Pulse	Pulse
REC	5.29	0	Pulse	Pulse

PB	0	0	0	0
REC	0	0	0	0

IC505

PIN	PB/REC
1	5.3
2	0
3	5.2

SYSTEM IC

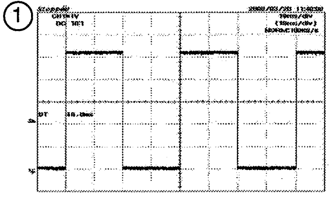
	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q501	0	0	0	0	0.66	0.66
Q502	0	0	2.17	2.18	0.26	0.28
Q503	5.29	5.29	5.27	5.26	4.8	4.59
Q5S1	0.46	0.44	2.43	2.36	0	0
Q5Y1	12.00	12.05	0	0	12.00	12.05
Q5Y2	0	0	12.01	12.08	0	0
Q514	0	0	H/L	H/L	H/L	H/L
Q515	0	0	H/L	H/L	H/L	H/L

IC5F1

PIN	PB/REC	PIN	PB/REC	PIN	PB/REC	PIN	PB/REC
1	0	14	5.27	27	-30.2	40	-26.9
2	0	15	0	28	-29.3	41	-27.1
3	0	16	-23.6	29	29.3	42	-27.1
4	0	17	-14.2	30	0	43	-27.1
5	5.3	18	-23.6	31	0	44	5.3
6	5.05	19	-29.9	32	-13.7	45	5.3
7	5.27	20	-26.6	33	5.3	46	5.2
8	5.11	21	-9.7	34	-30.4	47	5.3
9	4.89	22	-6.9	35	-3.9	48	0.85
10	0.27	23	-16.5	36	-26.7	49	0
11	0.27	24	-16.5	37	-26.7	50	0
12	0.39	25	-7	38	-26.7	51	0
13	2.77	26	-30.2	39	-26.7	52	0

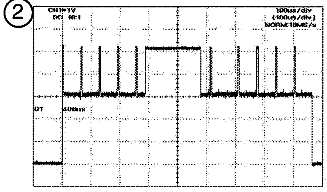
WAVEFORMS-2 (SYSTEM CONTROL/SERVO SECTION)

①



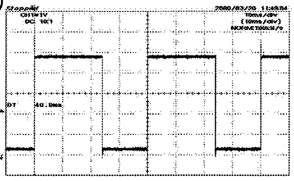
V.H/SW
(IC501 Pin (105))
1V/10mS
REC/PB modes

②



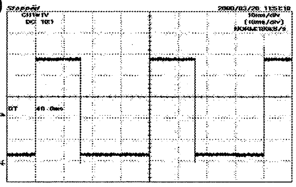
DV-SYNC
(IC501 Pin (109))
1V/100µS
QUE/REV modes

③



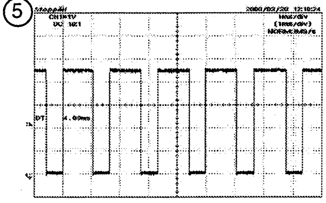
CTL+
(IC501 Pin③)
1V/10mS

④



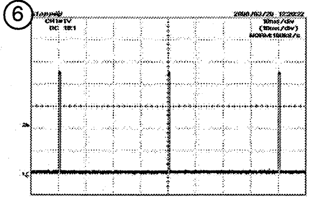
CTL–
(IC501 Pin④)
1V/10mS

⑤



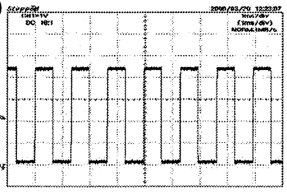
DFG
(IC501 Pin (104))
1V/1mS
REC/PB mode

⑥



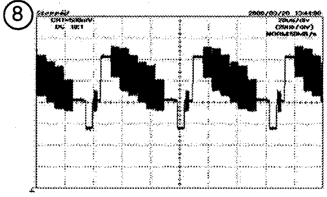
DPG
(IC501 Pin (103))
1V/10mS
REC/PB modes

⑦



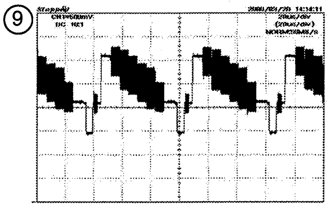
CFG
(IC501 Pin⑨)
1V/10mS

⑧



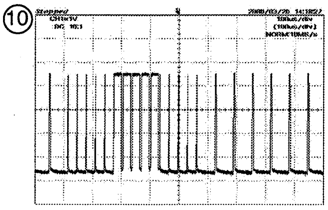
V-IN
(IC501 Pin ⑰)
500mV/20µS

⑨



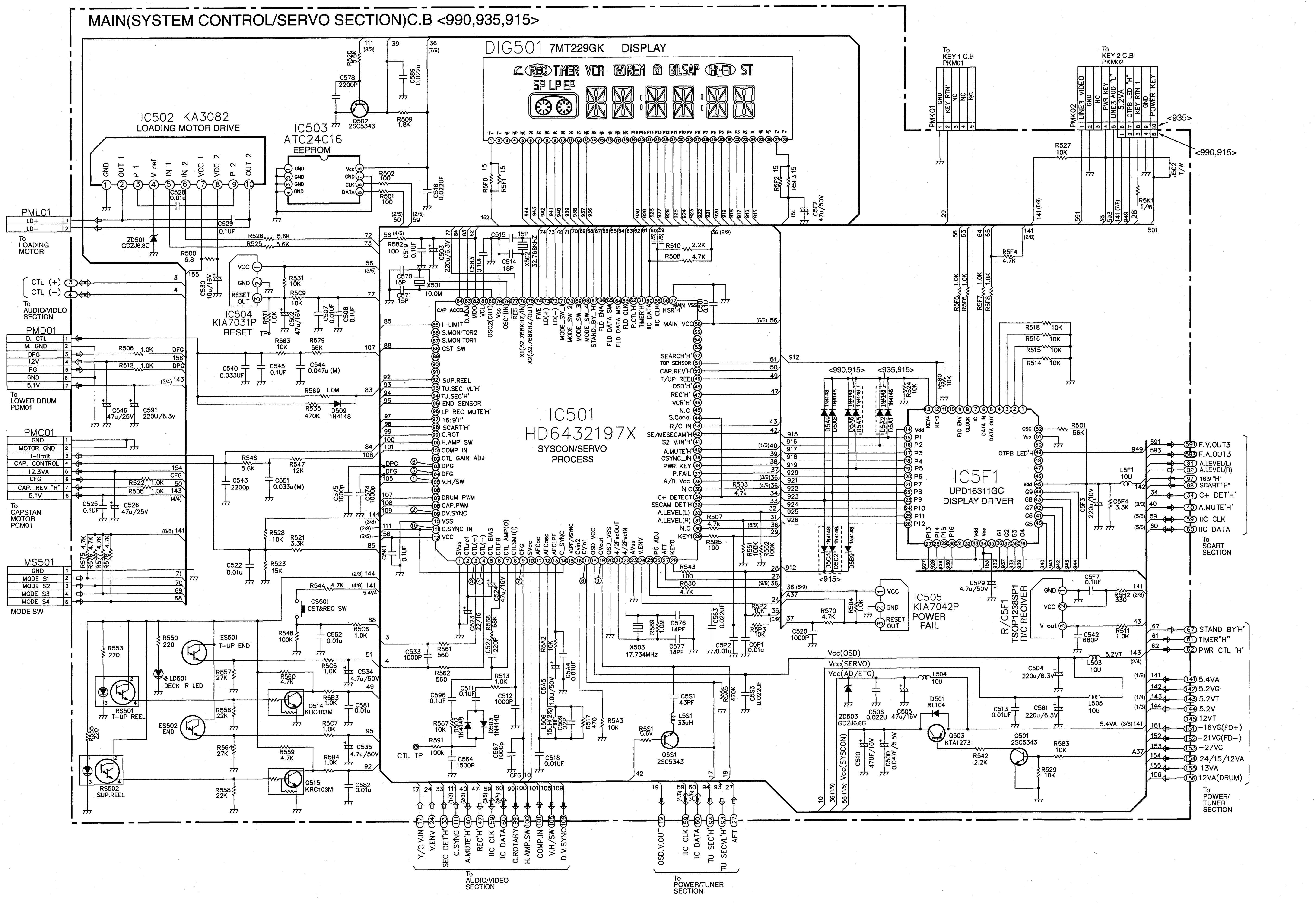
V-OUT
(IC501 Pin⑲)
500mV/20µS
EE/PB modes

⑩



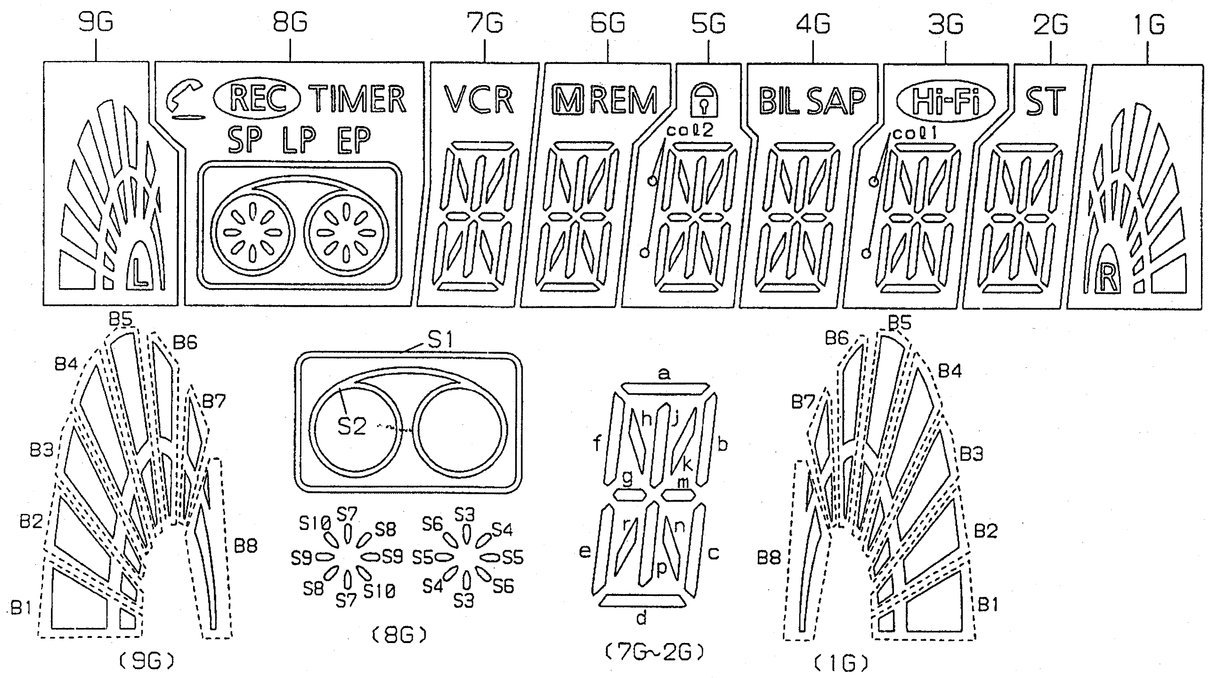
C-SYNC
(IC501Pin (111))
1V/100µS
EE/PB modes

SCHEMATIC DIAGRAM-7 (SYSTEM CONTROL/SERVO SECTION) <HV-FX990/GX935/915>


MAIN(SYSTEM CONTROL/SERVO SECTION)C.B <990,935,915>
DIG501 7MT229GK DISPLAY
IC502 KA3082
LOADING MOTOR DRIVE
IC503 ATC24C16
EEPROM
Q502 2SC5343
IC504 KIA7031P
RESET
IC501
HD6432197X
SYSCON/SERVO
PROCESS
IC5F1
UPD16311GC
DISPLAY DRIVER
IC505 KIA7042P
POWER FAIL
R/C5F1
TSOP1238SP1
R/C RECIVER
X501 32.768KHZ
X503 17.734MHz
Q503 KTA1273
Q501 2SC5343
Q5S1 2SC5343
Q514 KRC103M
Q515 KRC103M
ZD501 GDZJ6.8C
ZD503 GDZJ6.8C
D501 RL104
D509 1N4148
PML01
LD+
LD−
To LOADING MOTOR
CTL (+)
CTL (−)
To AUDIO/VIDEO SECTION
PMD01
D. CTL
M. GND
DFG
12V
PG
GND
5.1V
To LOWER DRUM PDM01
PMC01
GND
MOTOR GND
I-limit
CAP. CONTROL
12.3VA
CFG
CAP. REV "H"
5.1V
To CAPSTAN MOTOR PCM01
MS501
GND
MODE S1
MODE S2
MODE S3
MODE S4
MODE SW
ES501 T-UP END
ES502 END
LD501 DECK IR LED
RS501 T-UP REEL
RS502 SUP.REEL
CS501 CST&REC SW
CTL TP
To KEY 1 C.B PKM01
To KEY 2 C.B PKM02
<935>
<990,915>
F.V.OUT3
F.A.OUT3
A.LEVEL(L)
A.LEVEL(R)
16:9 "H"
SCART "H"
C+ DET'H'
A.MUTE'H'
IIC CLK
IIC DATA
To SCART SECTION
STAND BY'H'
TIMER"H"
PWR CTL 'H'
5.4VA
5.2VG
5.2VT
5.2V
12VT
−16VG(FD+)
−21VG(FD−)
−27VG
24/15/12VA
13VA
12VA(DRUM)
To POWER/TUNER SECTION
Vcc(OSD)
Vcc(SERVO)
Vcc(AD/ETC)
Vcc(SYSCON)
Y/C.V.IN
V.ENV
SEC DET'H'
C.SYNC
A.MUTE'H'
REC'H'
IIC CLK
IIC DATA
C.ROTARY
H.AMP.SW
COMP.IN
V.H/SW
D.V.SYNC
To AUDIO/VIDEO SECTION
OSD.V.OUT
IIC CLK
IIC DATA
TU SEC'H'
TU SECVL'H'
AFT
To POWER/TUNER SECTION

FL DISPLAY-1 <HV-FX7750/5700>

- GRID ASSIGNMENT

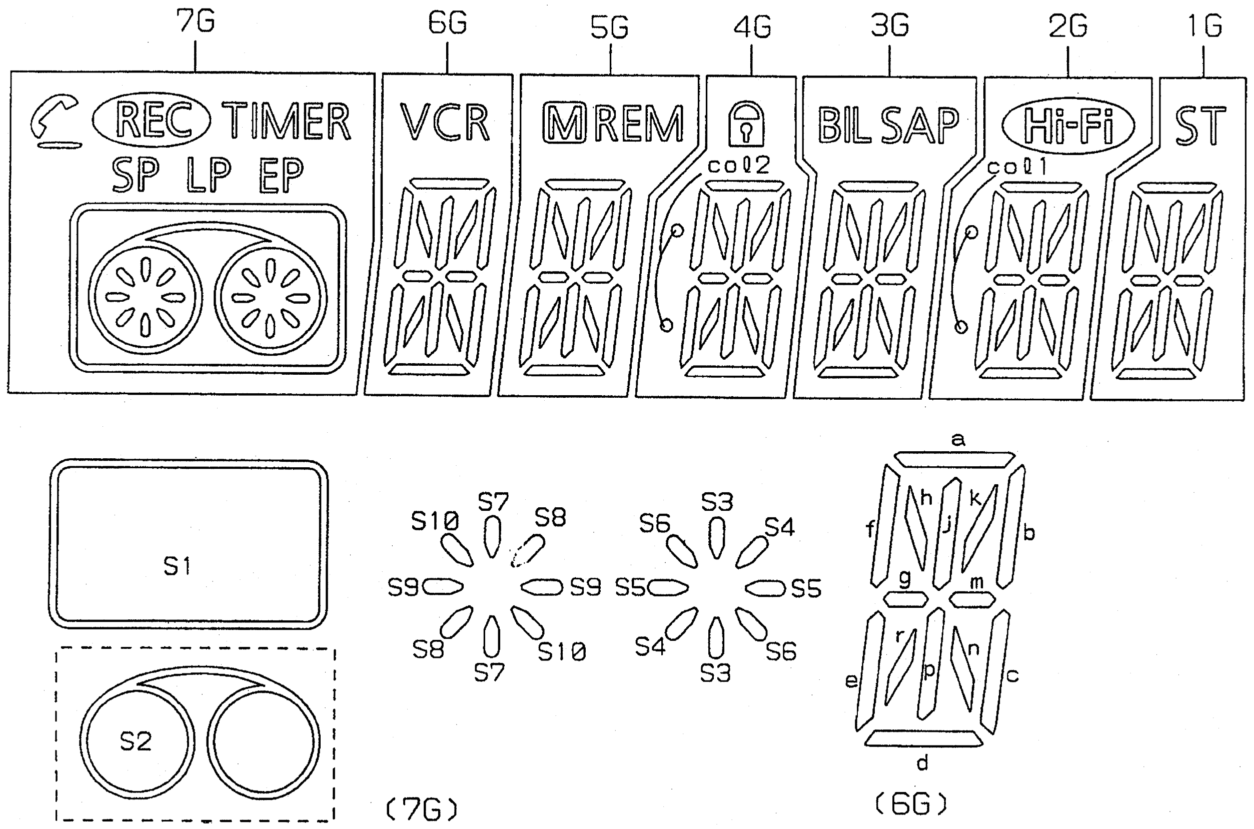

9G
8G
7G
6G
5G
4G
3G
2G
1G
REC TIMER
SP LP EP
VCR
M REM
col2
BIL SAP
Hi-Fi
col1
ST
L
R
B5
B6
B4
B7
B3
B2
B8
B1
(9G)
S1
S2
S10 S7 S8
S9 S9
S8 S7 S10
S6 S3 S4
S5 S5
S4 S3 S6
(8G)
a
h
j
k
f
g
m
b
e
r
p
n
c
d
(7G~2G)
(1G)

- ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	–	TIMER	VCR	M	🔒	SAP	Hi-Fi	ST	–
P2	–	REC	–	REM	col2	BIL	col1	–	–
P3	B4	☎	a	a	a	a	a	a	B4
P4	B5	EP	h	h	h	h	h	h	B5
P5	B6	LP	j	j	j	j	j	j	B6
P6	B7	SP	k	k	k	k	k	k	B7
P7	B8	S1	b	b	b	b	b	b	B8
P8	B3	S2	f	f	f	f	f	f	B3
P9	B2	S3	m	m	m	m	m	m	B2
P10	B1	S4	g	g	g	g	g	g	B1
P11	L	S5	c	c	c	c	c	c	R
P12	–	S6	e	e	e	e	e	e	–
P13	–	S7	r	r	r	r	r	r	–
P14	–	S8	p	p	p	p	p	p	–
P15	–	S9	n	n	n	n	n	n	–
P16	–	S10	d	d	d	d	d	d	–

FL DISPLAY-2 <HV-FX990/GX935/915>

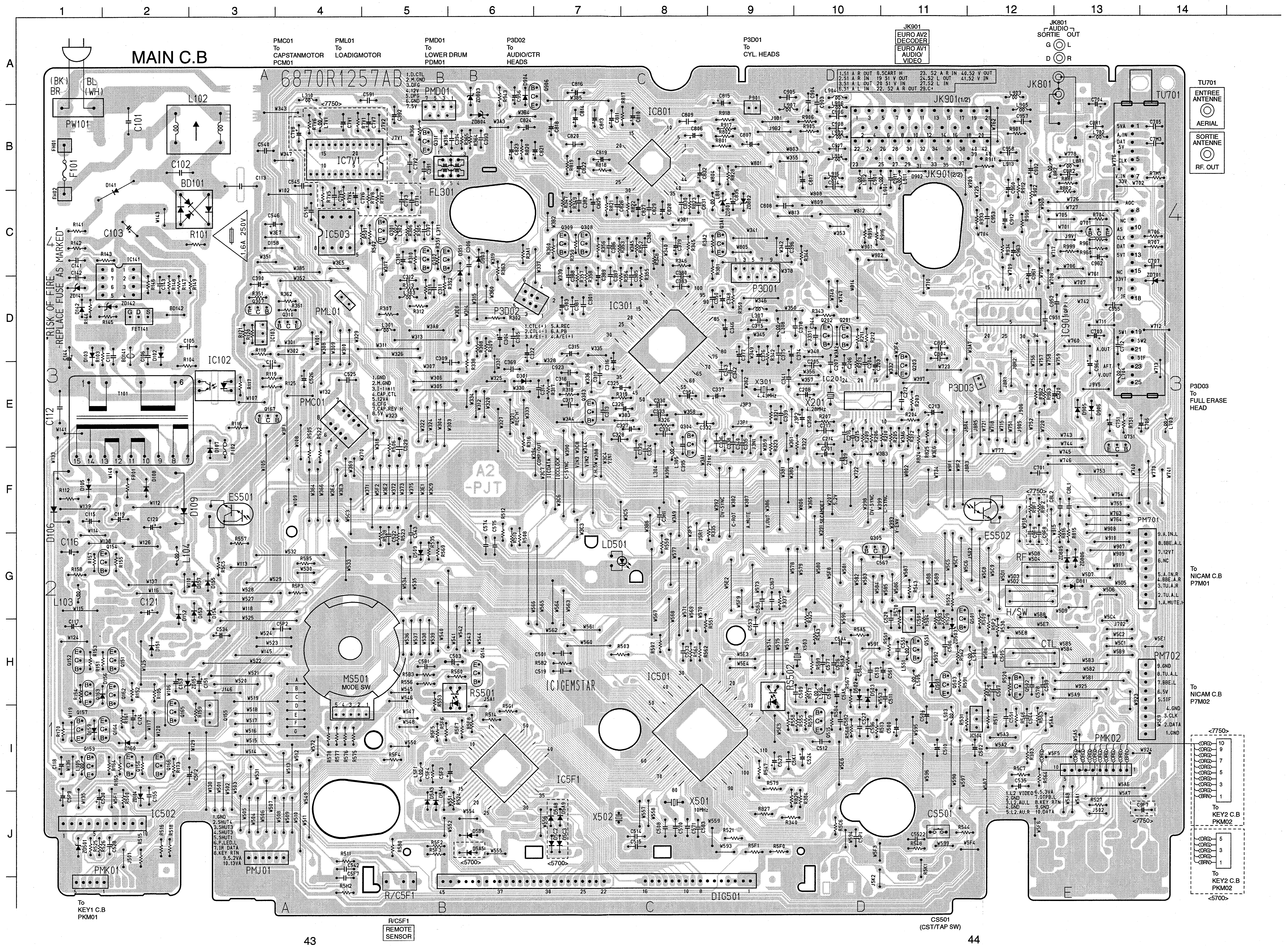
- GRID ASSIGNMENT


7G
6G
5G
4G
3G
2G
1G
REC TIMER
SP LP EP
VCR
M REM
col2
BIL SAP
Hi-Fi
col1
ST
S1
S2
(7G)
S10 S7 S8
S9 S9
S8 S7 S10
S6 S3 S4
S5 S5
S4 S3 S6
a
h
j
k
f
b
g
m
e
r
p
n
c
d
(6G)

- ANODE CONNECTION

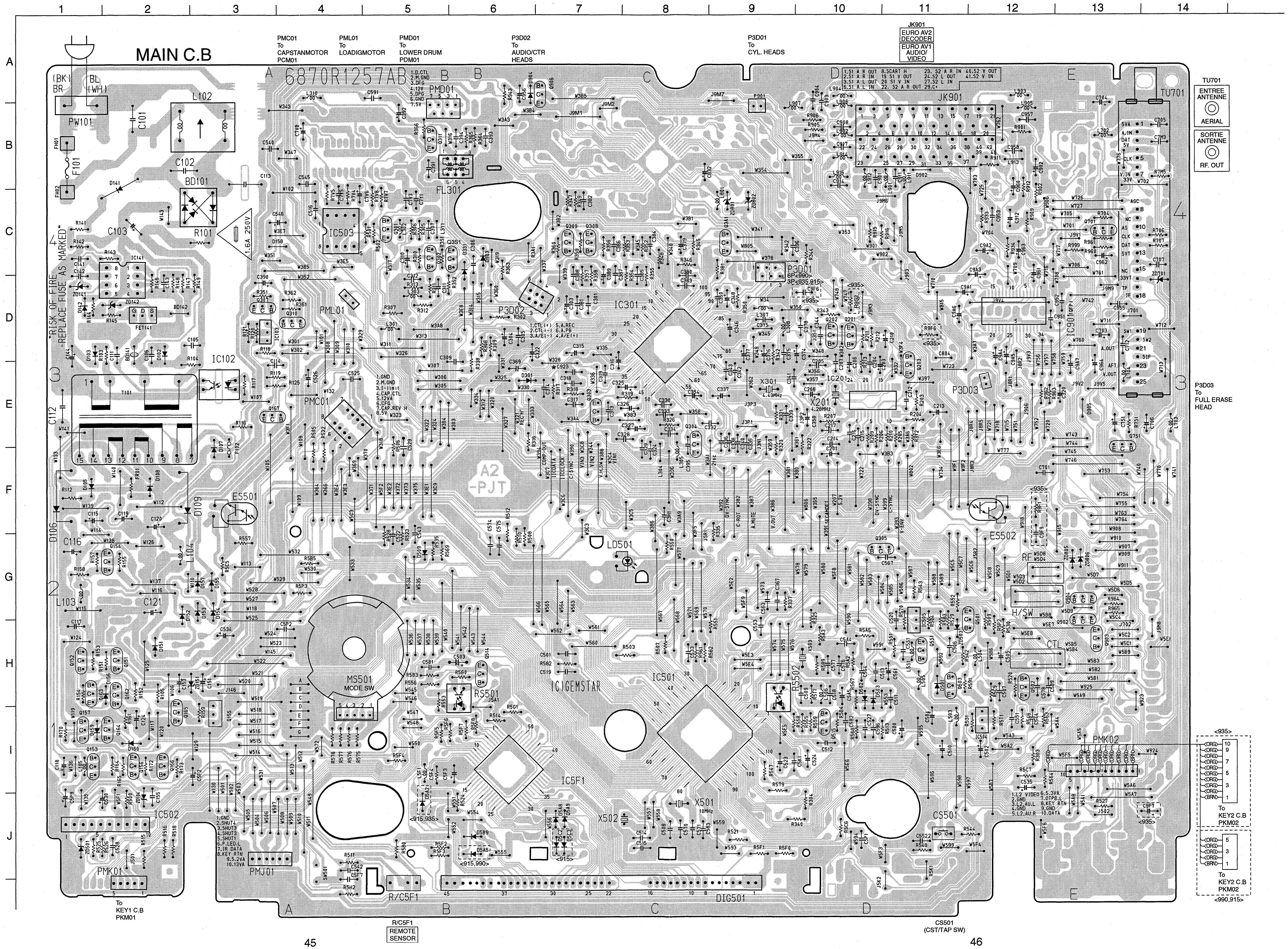
	7G	6G	5G	4G	3G	2G	1G
P1	TIMER	VCR	M	🔒	SAP	Hi-Fi	ST
P2	REC	–	REM	col2	BIL	col1	–
P3	☎	a	a	a	a	a	a
P4	EP	h	h	h	h	h	h
P5	LP	j	j	j	j	j	j
P6	SP	k	k	k	k	k	k
P7	S1	b	b	b	b	b	b
P8	S2	f	f	f	f	f	f
P9	S3	m	m	m	m	m	m
P10	S4	g	g	g	g	g	g
P11	S5	c	c	c	c	c	c
P12	S6	e	e	e	e	e	e
P13	S7	r	r	r	r	r	r
P14	S8	p	p	p	p	p	p
P15	S9	n	n	n	n	n	n
P16	S10	d	d	d	d	d	d

WIRING-1 (MAIN C.B) <HV-FX7750/5700>

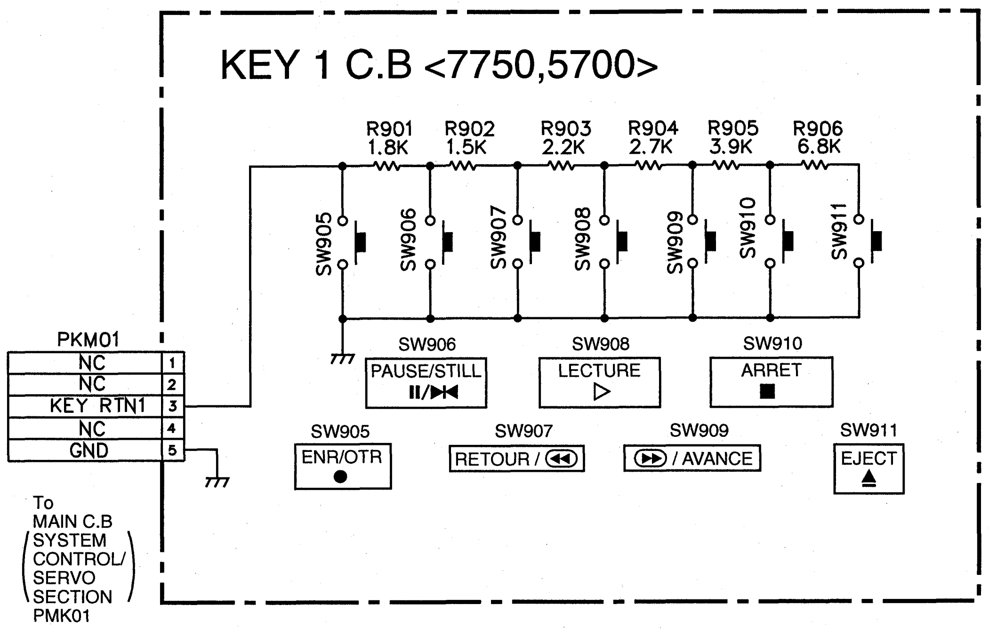


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
MAIN C.B
PMC01 To CAPSTANMOTOR PCM01
PML01 To LOADIGMOTOR
PMD01 To LOWER DRUM PDM01
P3D02 To AUDIO/CTR HEADS
P3D01 To CYL. HEADS
JK901
EURO AV2 DECODER
EURO AV1 AUDIO/ VIDEO
JK801
AUDIO
SORTIE OUT
G L
D R
TU701
ENTREE ANTENNE
AERIAL
SORTIE ANTENNE
RF. OUT
P3D03 To FULL ERASE HEAD
To NICAM C.B P7M01
To NICAM C.B P7M02
<7750>
To KEY2 C.B PKM02
<7750>
To KEY2 C.B PKM02
<5700>
To KEY1 C.B PKM01
R/C5F1 REMOTE SENSOR
CS501 (CST/TAP SW)
6870R1257AB
"RISK OF FIRE -REPLACE FUSE AS MARKED"
1.6A 250V
A2 -PJT
IC501
IC301
IC801
IC5F1
IC502
IC102
IC503
IC7V1
IC201
IC901
(IC)GEMSTAR
MS501 MODE SW
DIG501
LD501
ES501
ES502
RS501
RS502
CS501
PMK01
PMK02
PMJ01
PM701
PM702
PMC01
PML01
PMD01
FL301
JK901
JK801
TU701
X301
X201
X501
X502
BD101
L102
PW101
F101
T101

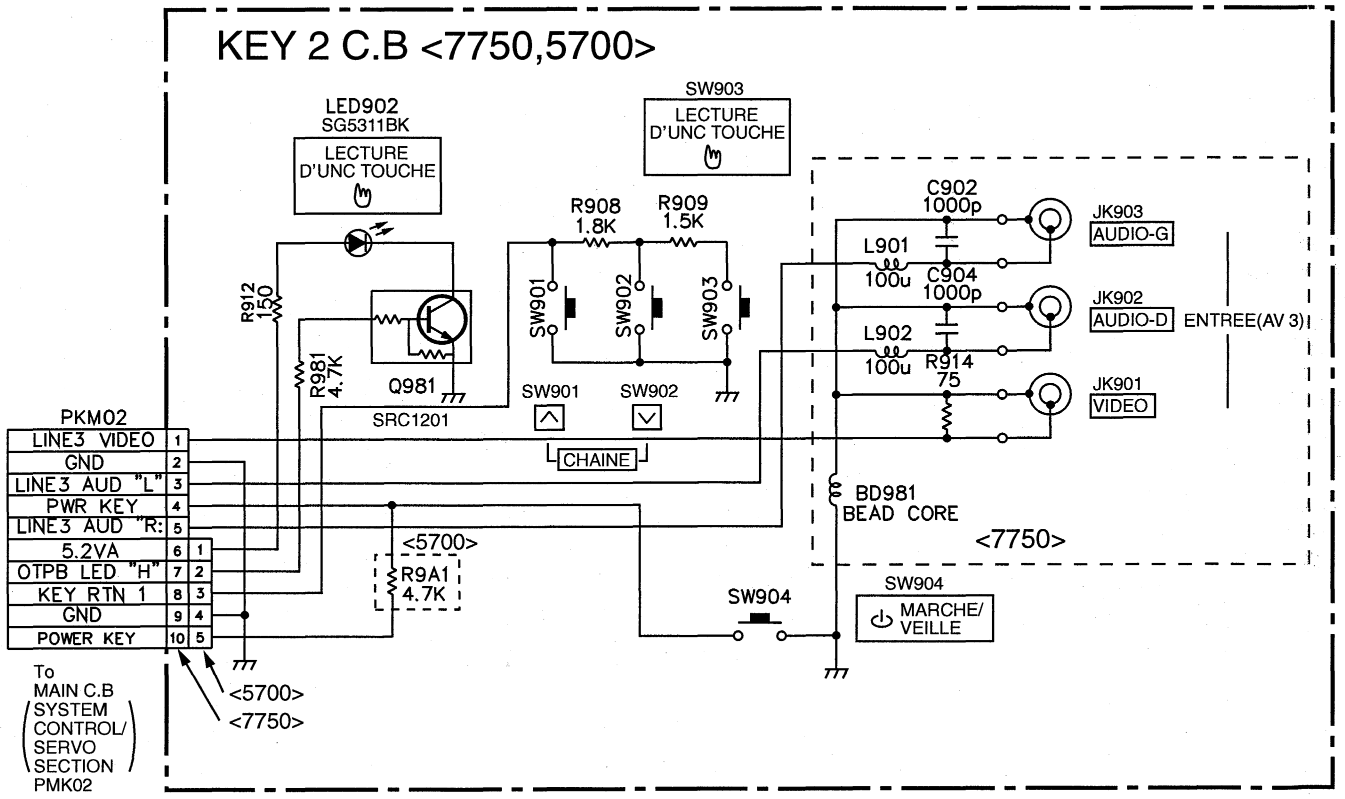
WIRING-2 (MAIN C.B) <HV-FX990/GX935/915>


MAIN C.B
6870R1257AB
PMC01 To CAPSTANMOTOR PCM01
PML01 To LOADIGMOTOR
PMD01 To LOWER DRUM PDM01
P3D02 To AUDIO/CTR HEADS
P3D01 To CYL. HEADS
JK901 EURO AV2 DECODER EURO AV1 AUDIO/ VIDEO
TU701
TU701 ENTREE ANTENNE AERIAL
SORTIE ANTENNE RF. OUT
P3D03 To FULL ERASE HEAD
"RISK OF FIRE REPLACE FUSE AS MARKED"
1.6A 250V
IC301
IC501
IC5F1
IC1GEMSTAR
MS501 MODE SW
RS501
RS502
LD501
ES501
ES502
FL301
PMK02
<935>
To KEY2 C.B PKM02
<990,915>
PMK01
To KEY1 C.B PKM01
PMJ01
R/C5F1
R/C5F1 REMOTE SENSOR
DIG501
CS501
CS501 (CST/TAP SW)
A2 -PJT
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I J

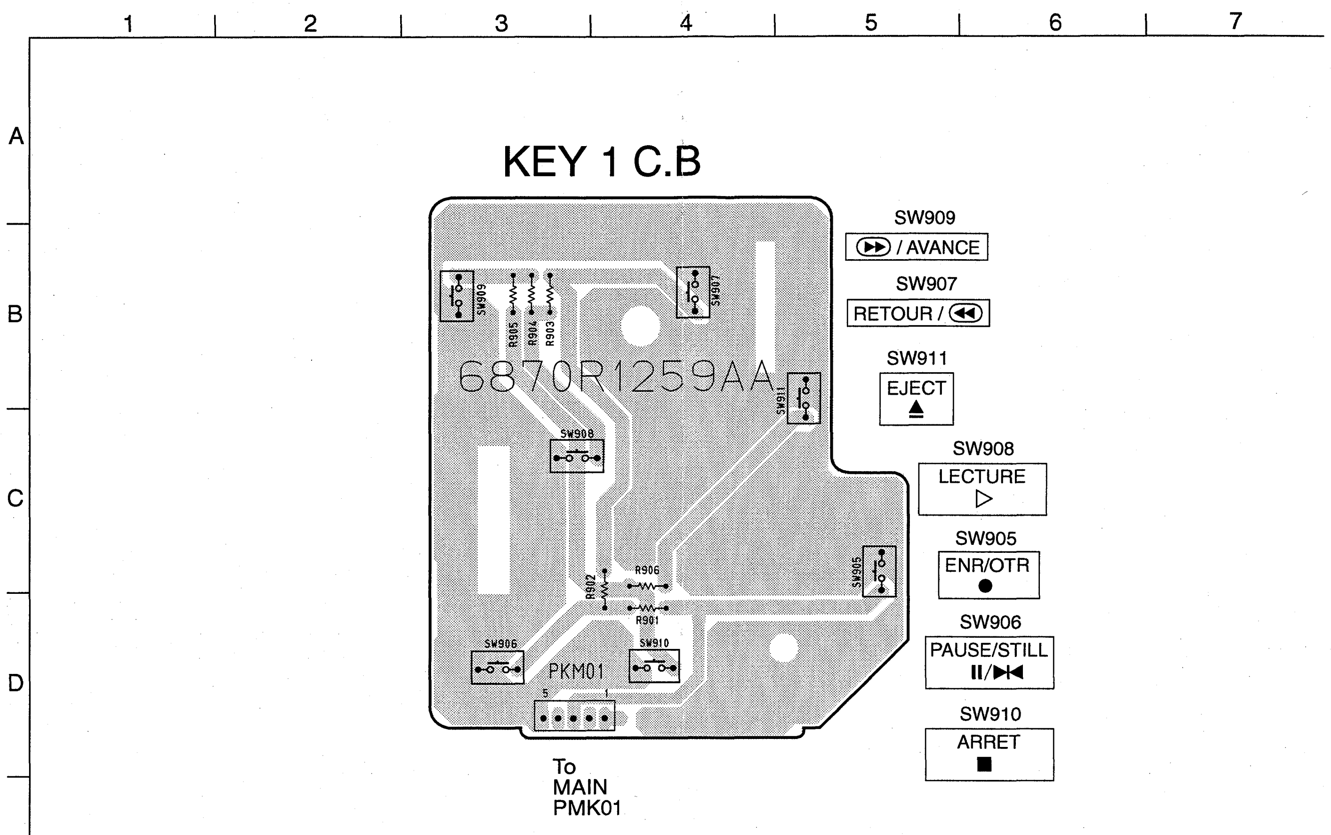
SCHEMATIC DIAGRAM-8 (KEY1 SECTION) <HV-FX7750/5700>


KEY 1 C.B <7750,5700>
R901 1.8K
R902 1.5K
R903 2.2K
R904 2.7K
R905 3.9K
R906 6.8K
SW905
SW906
SW907
SW908
SW909
SW910
SW911
PKM01
1 NC
2 NC
3 KEY RTN1
4 NC
5 GND
SW906 PAUSE/STILL II/▶◀
SW908 LECTURE ▷
SW910 ARRET ■
SW905 ENR/OTR ●
SW907 RETOUR / ◀◀
SW909 ▶▶ / AVANCE
SW911 EJECT ▲
To MAIN C.B (SYSTEM CONTROL/ SERVO SECTION) PMK01

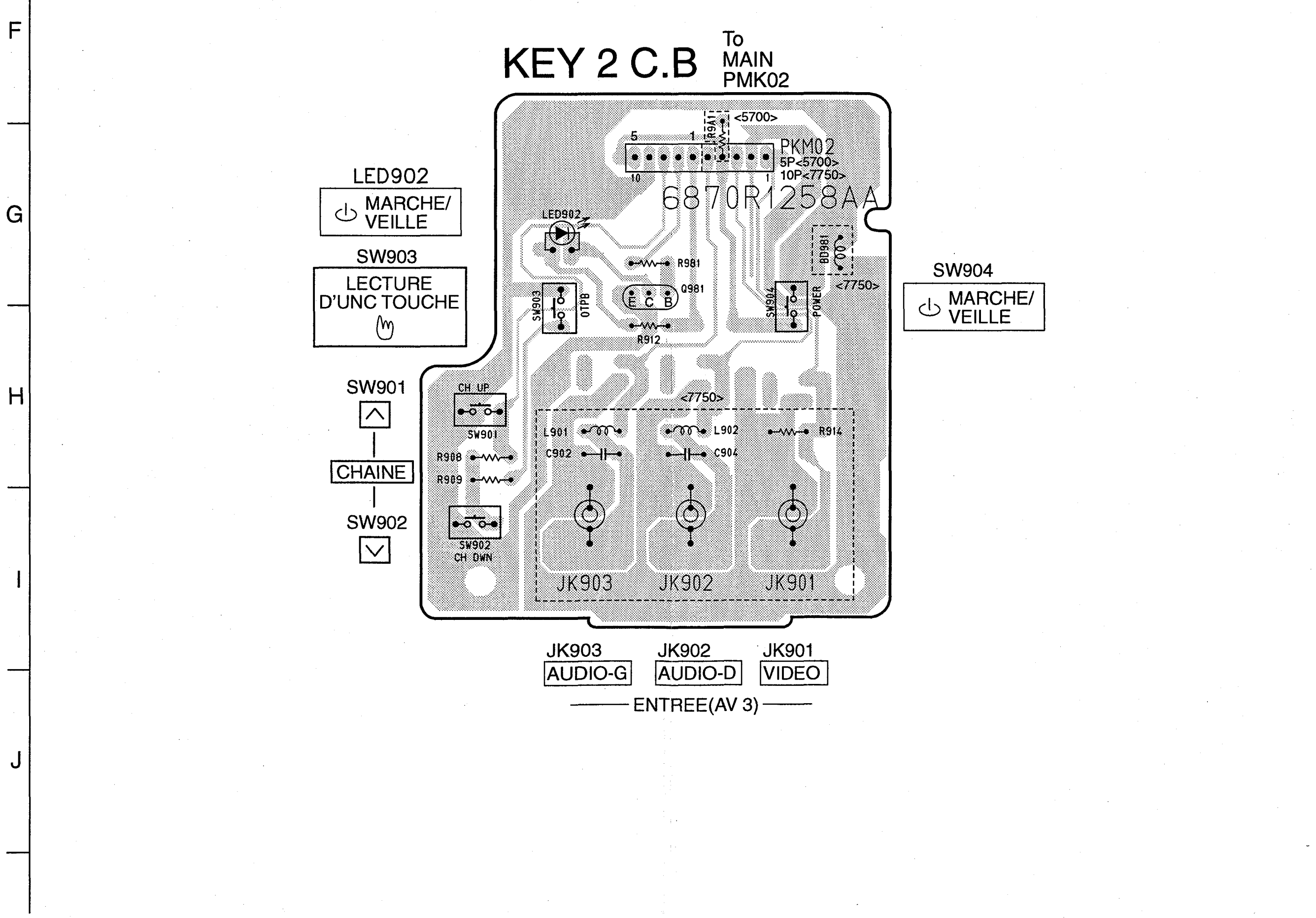
SCHEMATIC DIAGRAM-9 (KEY2 SECTION) <HV-FX7750/5700>


KEY 2 C.B <7750,5700>
LED902 SG5311BK
LECTURE D'UNC TOUCHE
SW903 LECTURE D'UNC TOUCHE
R908 1.8K
R909 1.5K
C902 1000p
L901 100u
C904 1000p
L902 100u
R914 75
JK903 AUDIO-G
JK902 AUDIO-D
JK901 VIDEO
ENTREE(AV 3)
R912 150
R981 4.7K
Q981 SRC1201
SW901
SW902
SW903
SW901 ∧
SW902 ∨
CHAINE
BD981 BEAD CORE
<7750>
<5700>
R9A1 4.7K
SW904
SW904 MARCHE/ VEILLE
PKM02
1 LINE3 VIDEO
2 GND
3 LINE3 AUD "L"
4 PWR KEY
5 LINE3 AUD "R"
6 1 5.2VA
7 2 OTPB LED "H"
8 3 KEY RTN 1
9 4 GND
10 5 POWER KEY
<5700>
<7750>
To MAIN C.B (SYSTEM CONTROL/ SERVO SECTION) PMK02

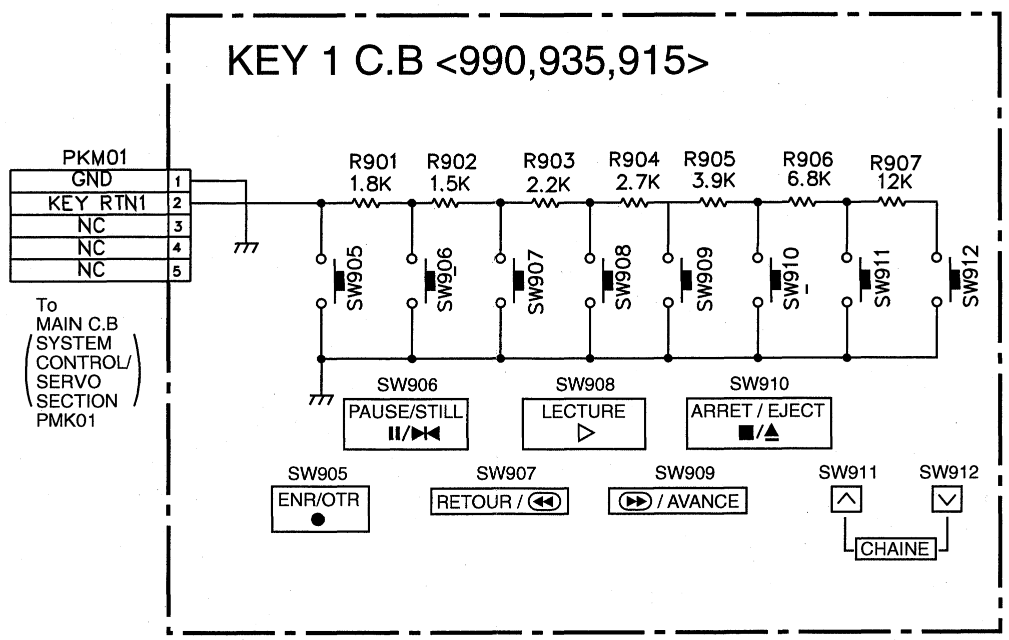
WIRING-3 (KEY1 C.B) <HV-FX7750/5700>


1
2
3
4
5
6
7
A
B
C
D
E
KEY 1 C.B
6870R1259AA
SW909 ▶▶ / AVANCE
SW907 RETOUR / ◀◀
SW911 EJECT ▲
SW908 LECTURE ▷
SW905 ENR/OTR ●
SW906 PAUSE/STILL II/▶◀
SW910 ARRET ■
PKM01
R905
R904
R903
R902
R906
R901
To MAIN PMK01

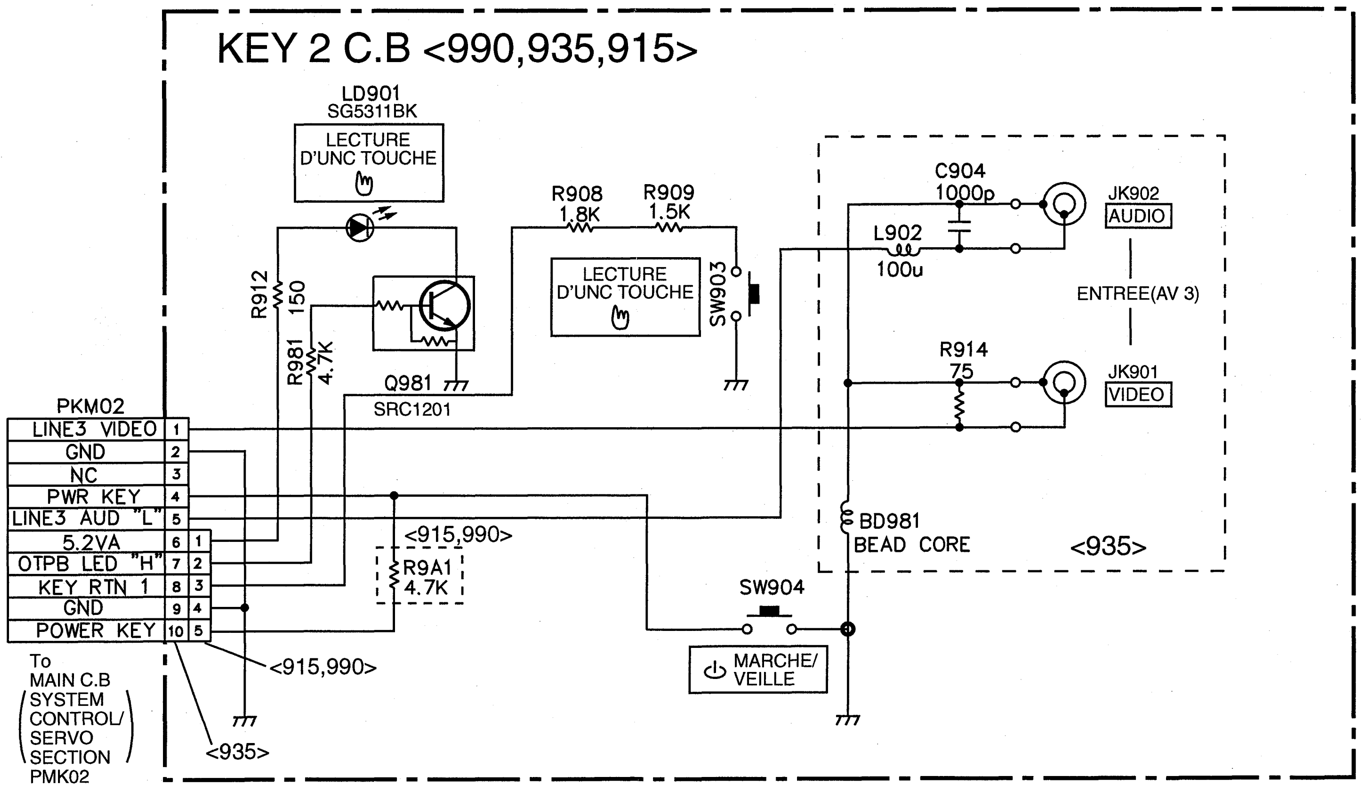
WIRING-4 (KEY2 C.B) <HV-FX7750/5700>


F
G
H
I
J
KEY 2 C.B
To MAIN PMK02
PKM02 5P<5700> 10P<7750>
<5700>
<7750>
6870R1258AA
LED902 MARCHE/ VEILLE
SW903 LECTURE D'UNC TOUCHE
SW901 ∧
CHAINE
SW902 ∨
SW904 MARCHE/ VEILLE
R981
Q981
R912
BD981
L901
L902
C902
C904
R908
R909
R914
CH UP
CH DWN
JK903
JK902
JK901
JK903 AUDIO-G
JK902 AUDIO-D
JK901 VIDEO
ENTREE(AV 3)

SCHEMATIC DIAGRAM-10 (KEY1 SECTION) <HV-FX990/GX935/915>


KEY 1 C.B <990,935,915>
PKM01
GND 1
KEY RTN1 2
NC 3
NC 4
NC 5
To MAIN C.B (SYSTEM CONTROL/ SERVO SECTION) PKM01
R901 1.8K
R902 1.5K
R903 2.2K
R904 2.7K
R905 3.9K
R906 6.8K
R907 12K
SW905
SW906
SW907
SW908
SW909
SW910
SW911
SW912
SW906 PAUSE/STILL
SW908 LECTURE ▷
SW910 ARRET / EJECT ■/▲
SW905 ENR/OTR ●
SW907 RETOUR /
SW909 / AVANCE
SW911 ∧
SW912 ∨
CHAINE

SCHEMATIC DIAGRAM-11 (KEY2 SECTION) <HV-FX990/GX935/915>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LD901 SG5311BK
LECTURE D'UNC TOUCHE
R908 1.8K
R909 1.5K
LECTURE D'UNC TOUCHE
SW903
R912 150
R981 4.7K
Q981 SRC1201
C904 1000p
L902 100u
JK902 AUDIO
ENTREE(AV 3)
R914 75
JK901 VIDEO
BD981 BEAD CORE
<935>
PKM02
LINE3 VIDEO 1
GND 2
NC 3
PWR KEY 4
LINE3 AUD "L" 5
5.2VA 6 1
OTPB LED "H" 7 2
KEY RTN 1 8 3
GND 9 4
POWER KEY 10 5
<915,990>
R9A1 4.7K
SW904
MARCHE/ VEILLE
To MAIN C.B (SYSTEM CONTROL/ SERVO SECTION) PKM02
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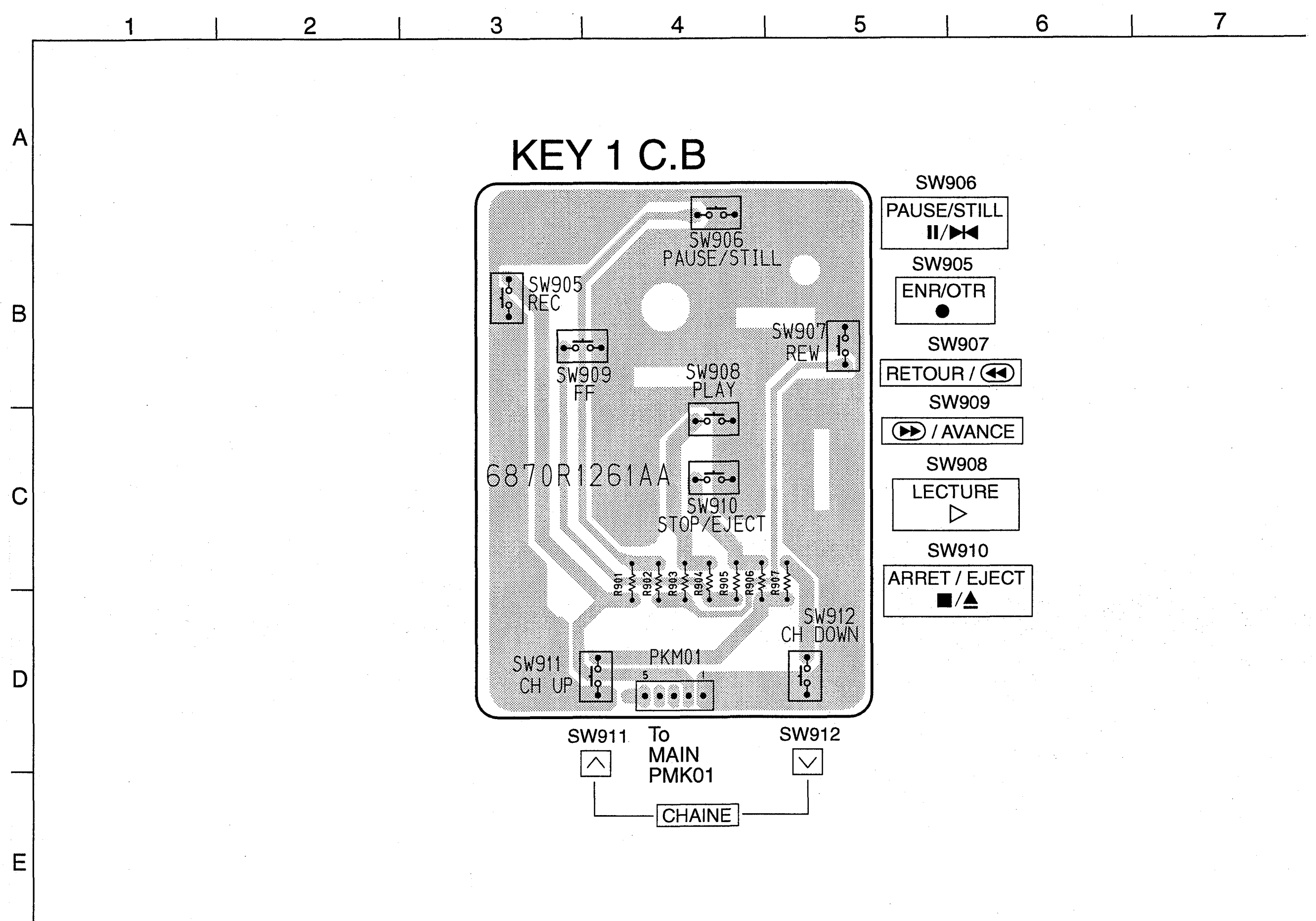
WIRING-5 (KEY1 C.B) <HV-FX990/GX935/915>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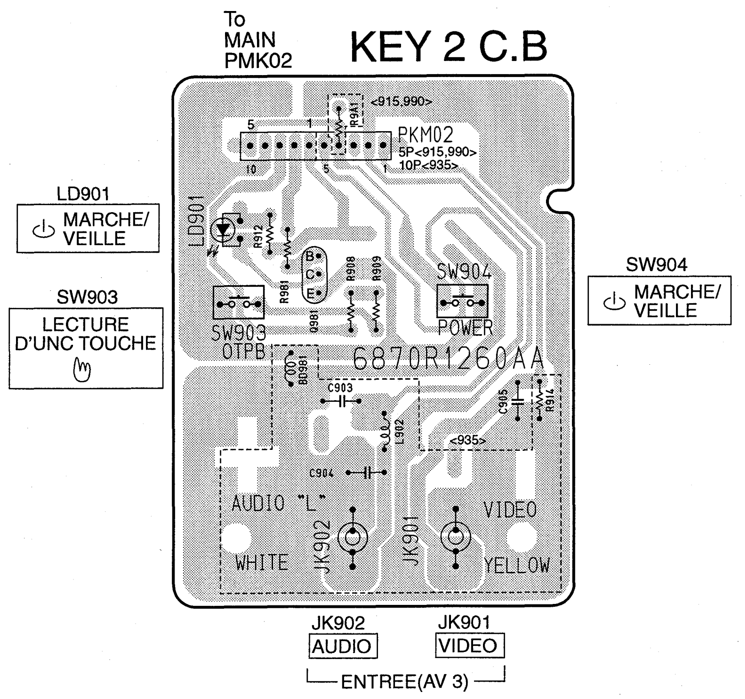
2
3
4
5
6
7
A
B
C
D
E
KEY 1 C.B
SW906 PAUSE/STILL
SW905 REC
SW907 REW
SW909 FF
SW908 PLAY
6870R1261AA
SW910 STOP/EJECT
R901 R902 R903 R904 R905 R906 R907
SW912 CH DOWN
SW911 CH UP
PKM01
SW906 PAUSE/STILL
SW905 ENR/OTR ●
SW907 RETOUR /
SW909 / AVANCE
SW908 LECTURE ▷
SW910 ARRET / EJECT ■/▲
SW911 ∧
To MAIN PKM01
SW912 ∨
CHAINE

WIRING-6 (KEY2 C.B) <HV-FX990/GX935/915>


To MAIN PKM02
KEY 2 C.B
<915,990>
PKM02 5P<915,990> 10P<935>
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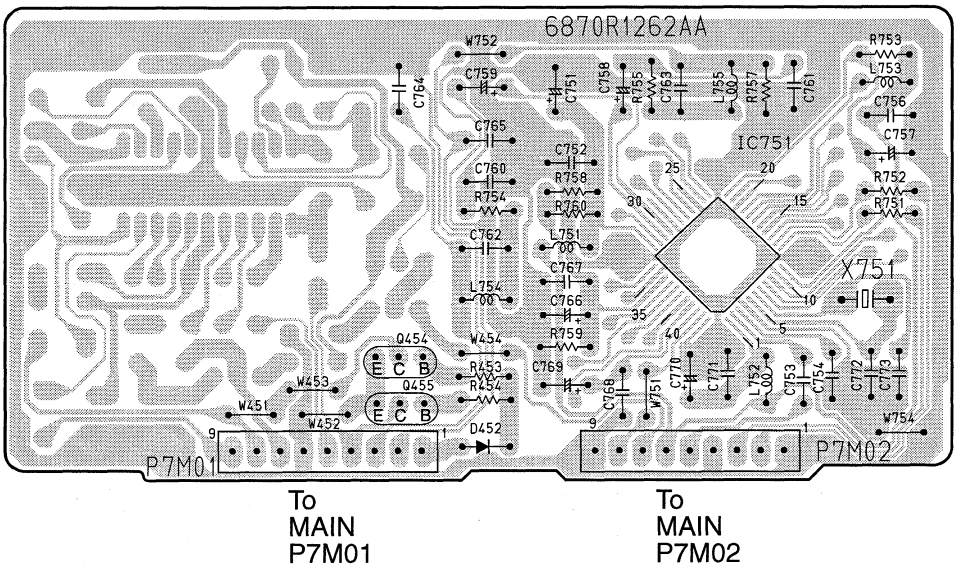
SW903 LECTURE D'UNC TOUCHE
LD901
R912
R981
Q981
R908
R909
SW904 POWER
SW903 OTPB
6870R1260AA
BD981
C903
L902
R914
<935>
C904
AUDIO "L"
WHITE
JK902
JK901
VIDEO
YELLOW
SW904 MARCHE/ VEILLE
JK902 AUDIO
JK901 VIDEO
ENTREE(AV 3)
F
G
H
I
J

WIRING-7 (NICAM/A2 C.B) <HV-FX7750/5700>

NICAM C.B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C764
C759
C765
C760
R754
C762
L754
W454
R453
R454
D452
Q454
Q455
E C B
E C B
W453
W451
W452
C751
C758
R755
C763
L755
R757
C761
C752
R758
R760
L751
C767
C766
R759
C769
IC751
25
20
30
15
35
40
10
5
1
X751
R753
L753
C756
C757
R752
R751
C768
W751
C770
C771
L752
C753
C754
C772
C773
W754
9
1
P7M01
9
1
P7M02
To
MAIN
P7M01
To
MAIN
P7M02

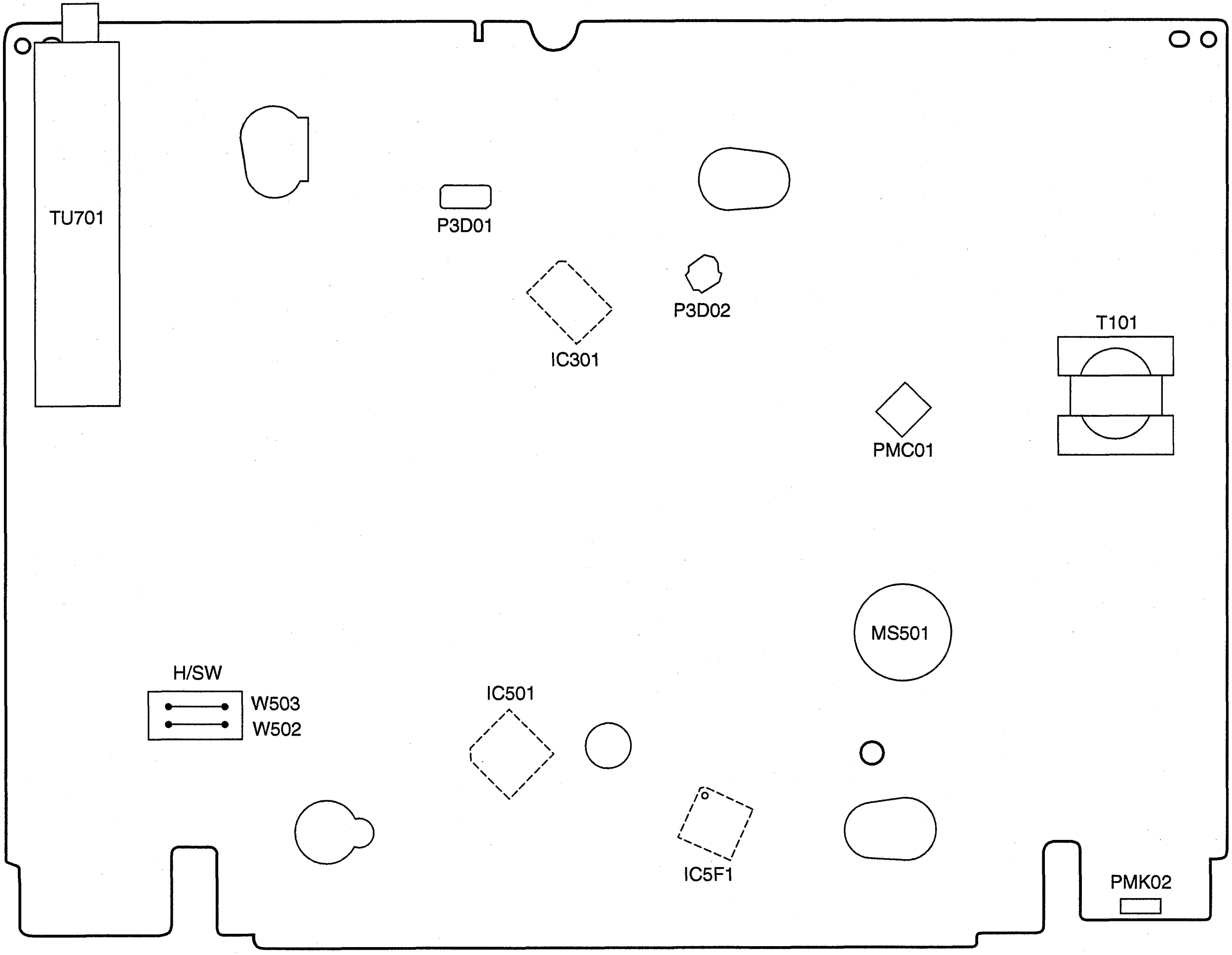
ADJUSTMENT

Test Equipment

- Oscilloscope
- AC Millivolt Meter
- Test Tape
  TTV-P1

Adjustment Location

MAIN C.B (TOP VIEW)


TU701
P3D01
P3D02
IC301
T101
PMC01
MS501
H/SW
W503
W502
IC501
IC5F1
PMK02

1. Servo Adjustment

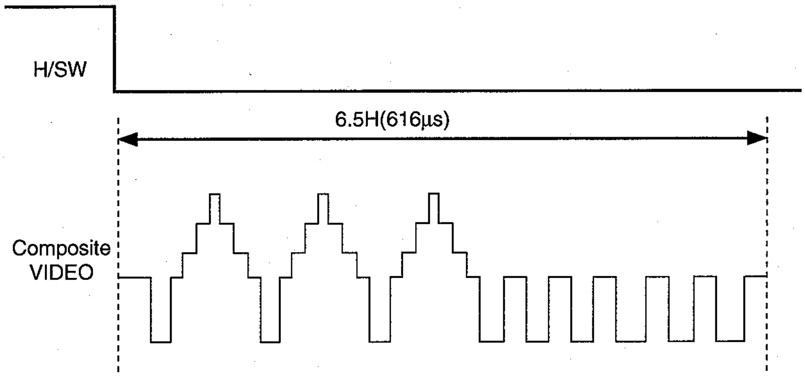
1) PG Adjustment

MODE	MEASUREMENT POINT	ADJUSTMENT POINT	SPECIFICATION
PLAY (TTV-P1)	VIDEO OUT H/SW (W502, W503)	'PLAY' KEY (SET) + 'O' KEY (REMOCON)	6.5H ± 0.5H

- **Adjustment Procedure**

1. Insert the PAL SP Test Tape (TTV-P1) and play.
   Note - Adjust the distance of X, pressing the Tracking(+) or Tracking(-) when the "ATR" is blink after the PAL SP Test Tape is inserted.
2. Connect the CH1 of the oscilloscope to the H/SW (W502, W503) and CH2 to the Video Out for the VCR.
3. Trigger the mixed Video Signal of CH2 to the CH1 H.SW (W502, W503), and then check the distance (time difference), which is from the selected A(B) Head point of the H.SW(W502, W503) signal to the starting point of the vertical synchronized signal, to 6.5H ± 0.5H (416µs, 1H=64.0µs).

- **WAVEFORM**



IC DESCRIPTION

IC, HD6432197X

Pin No.	Pin Name	I/O	Description
1	SVss	–	Servo Block GND
2	CTLref	O	Svcc/2 output, and CTL amp reference voltage input
3	CTL(+)	I/O	CTL(+) input/output
4	CTL(–)	I/O	CTL(-) input/output
5	CTL BIAS	I	CTL amp bias voltage
6	CTL FB	I	CTL feedback SW control
7	CTL AMP (O)	O	CTL primary amp output
8	CTL SMT(I)	I	CTL Schmitt amp input
9	CFG	I	CFG input
10	SVcc	–	Servo Block power supply (+5V)
11	AFCpc	I/O	For the connection of AFC "C" of sync separator
12	AFCosc	I/O	Generates AFC of sync separator
13	AFCLPF	I/O	LPF of sync separator
14	C_SYNC	I/O	C. SYNC input
15	VLPF/VSYNC	I	Capacitor connection GND
16	Cvin2	I	Video signal input for NTSC captions slicer
17	Cvin1	I	Video signal input for OSD
18	OSD Vcc	–	OSD Block power supply (+5V)
19	CVout	O	Video signal output
20	OSD_VSS	I	OSD Block GND
21	4/2FscOUT	O	For the connection of subcarrier oscillator
22	4/2FscIN	I	For the connection of subcarrier oscillator, S/W selectable
23	AVss	–	A/D Block GND
24	V.ENV	I	Video envelope input
25	A.ENV	I	HiFi envelope input
26	PG ADJ	I	For PG delay adjustment
27	AFT	I	AFT +/- input for tuner
28	KEY0	I	Key Return 0
29	KEY1	I	Key Return 1
30	N.C	–	Not connected
31	A. LEVEL (L)	I	Audio (L) input to drive level meter
32	A. LEVEL (R)	I	Audio (R) input to drive level meter
33	SECAM DET 'H'	I	SECAM discrimination signal input
34	C+ DETECT	I	C+ & 2nd pass 16:9 detector
35	N.C	–	Not connected
36	A/D Vcc	–	A/D Block power supply
37	P.FAIL	I	Power failure input
38	PWR KEY	O	Output to eliminate noise interfering with blue background signal
39	CSYNC_IN	I	SYNC input to detect whether signal is present
40	A.MUTE 'H'	O	Output to control audio muting
41	S2V.IN 'H'	O	Output to switch the input selector
42	SE/MESECAM 'H'	I/O	"H" is input from Y/C in SECAM/MESECAM mode.

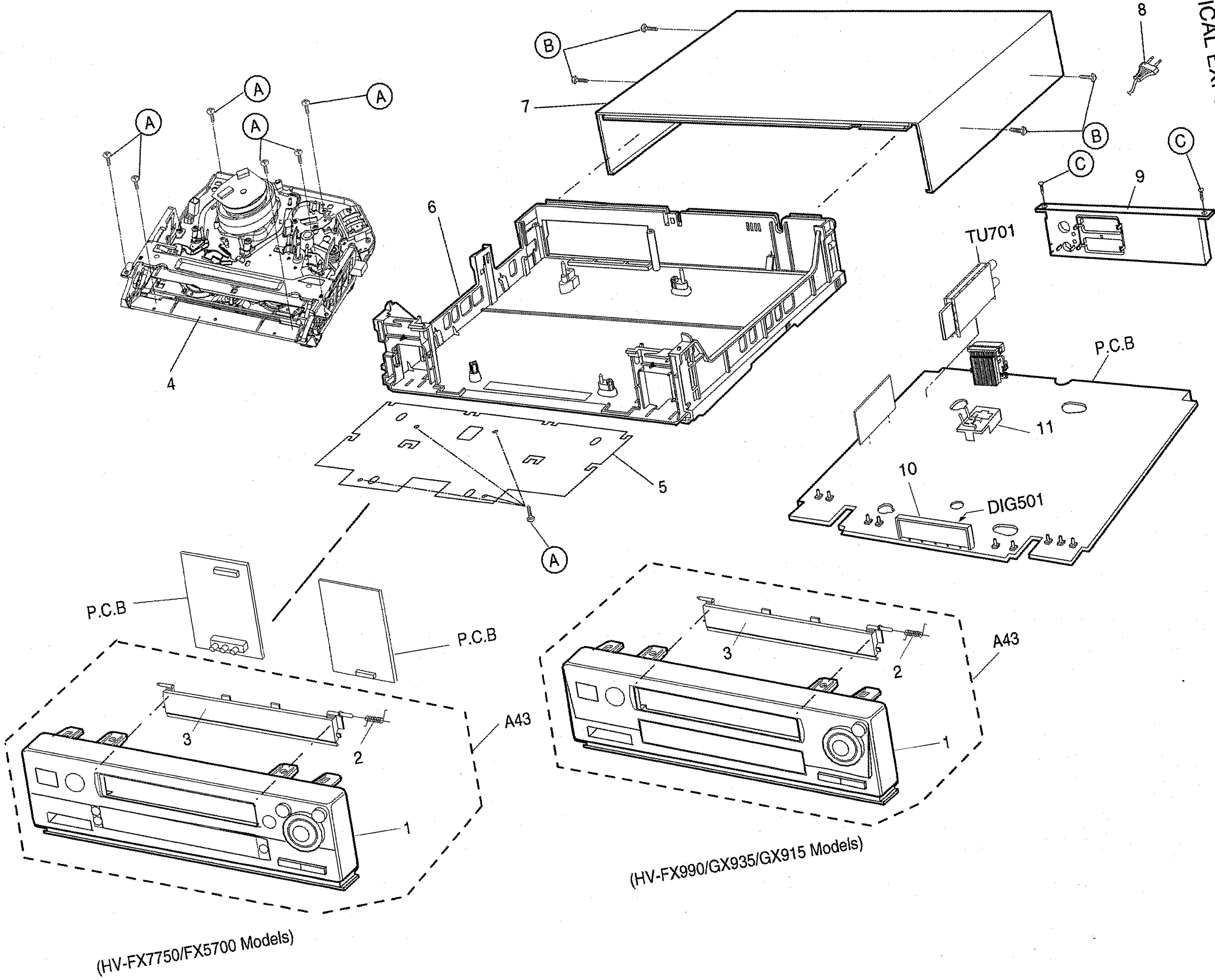
Pin No.	Pin Name	I/O	Description
43	R/C IN	I	Remote input
44	S Canal	I/O	C + & 2nd pass 16 : 9 detector
45	N.C	–	Not connected
46	VCR 'H'	O	TV/VCR control output
47	REC 'H'	O	Recording current control output
48	OSD 'H'	O	OSD color control in YC SECAM/MESECAM mode
49	T/UP REEL	I	Take-up reel input
50	CAP. REC 'H'	O	Capstan forward/reverse control output
51	TOP SENSOR	I	Top sensor input
52	SEARCH 'H'	O	Capstan Vcc control output
53	PLUS2 DATA	O	VCR Plus+ II control code output
54	R. FINDER	O	Remote control finder output control
55	R/FIND MUTE 'L'	I/O	Remote control finder muting control
56	MAIN VCC	–	Micom power supply
57	MAIN VSS	–	Micom GND
58	HSR 'H'	I/O	Capstan Vcc control output
59	IIC CLK	O	IIC control clock pin
60	IIC DATA	I/O	IIC control data pin
61	TIMER 'H'	O	Power switch for VPS check during power off
62	P. CTL 'H'	O	VCR main power control output
63	FLD CLK	O	FLD control clock output
64	FLD DATA MS	O	FLD data output to Micom
65	FLD DATA SM	I	Micom data input from FLD
66	FLD ENA	O	FLD enable output
67	STAND BY 'H'	O	3W mode control output (FLD power off)
68	MODE SW 4	I	MD/SW4 input
69	MODE SW 3	I	MD/SW3 input
70	MODE SW 2	I	MD/SW2 input
71	MODE SW 1	I	MD/SW1 input
72	LD (–)	O	Loading motor drive (-)
73	LD (+)	O	Loading motor drive (+)
74	FWE	I	Flash memory write designation pin: Open for mask product
75	X2 (32.768kHz/OUT)	O	For the connection of 32.768 kHz OSC
76	X1 (32.768kHz/IN)	I	For the connection of 32.768 kHz OSC
77	$\overline{\text{RES}}$	I	Micom reset pin ("L" active)
78	OSC1 (IN)	I	For the connection of 10 MHz OSC
79	Vss	–	Micom GND
80	OSC2 (OUT)	O	For the connection of 10 MHz OSC
81	VCL	I	For the connection of capacitor to stabilize power supply (capacitor connected to Vss)
82	MDO	I	Designates advanced mode, coupled at "H"
83	D. ADJ	I/O	Drum control output during slow

Pin No.	Pin Name	I/O	Description
84	CAP ACCEL	I/O	Capstan control output during slow
85	I-LIMIT	I/O	Output to control capstan current
86	S. MONITOR2	O	Servo monitor 2
87	S. MONITOR1	O	Servo monitor 1
88	CST SW	I	CST SW/REC Tab input
89	RX	I	AV link data input
90	TX	O	AV link data output
91	BBE 'L'	O	BBE: AIWA RGB PATH: AKAI
92	SUP. REEL	I	Supply reel input
93	TU. SEC VL 'H'	O	Tuner SECAM VHF-L band switching control
94	TU. SEC 'H'	O	Tuner SECAM mode control
95	END SENSOR	I	End sensor input
96	LP REC MUTE 'H'	O	Hi-Fi audio is muted during LP recording
97	16:9 'H'	O	TV 16:9 mode control
98	SCART 'H'	O	TV audio line mode switching
99	C. ROT	I/O	Color rotary SW signal output
100	H. AMP SW	I/O	Head amp SW output
101	COMP IN	I/O	Comparator input
102	CTL GAIN ADJ	I/O	CTL siganl Gain control
103	DPG	I	DPG input
104	DFG	I	DFG input
105	V.H/SW	O	V.HD/SW output
106	A.H/SW	O	A.HD/SW output
107	DRUM PWM	O	Drum PWM control
108	CAP.PWM	O	Capstan PWM control
109	DV. SYNC	O	DVSYNC output
110	VSS	–	Micom GND
111	C.SYNC IN	I	C.SYNC input for sync separator
112	VCC	–	Micom power supply

IC, μPD16311GC-AB6

Pin No.	Pin Name	I/O	Description
1 ~ 4	SHTL1 ~SHTL4	I	4-bit general-purpose input pins
5	DATA OUT	O	Serial data output. Lower bits are first output synchronized with the trailing edge of shift clock. (The output is Nch open drain.)
6	DATA IN	I	Serial data input. Lower bits are first input synchronized with the leading edge of shift clock.
7	IC	–	Must always be set to open (set to VDD voltage)
8	CLOCK	I	Serial data is input at the leading edge, and data is output at the trailing edge.
9	FLD ENV		The leading or trailing edge initializes the serial I/F to stand by for receiving a command. The data input after the STB trailing edge is processed as a command. When command or data is being processed, the processing is interrupted and the serial I/F is initialized. When STB is "H", CLK is ignored.
10	KEY1	I	Data input to these pins is latched in the final stage of display cycle.
11	KEY2	I	
12	KEY3	I	
13	KEY4	I	
14	Vdd	–	5 V ± 10%
15 ~ 26	P1 ~ P12	O	Exclusively used for segment outputs
27 ~ 32	P13 ~ P16	O	Segment/grid outputs swicthable
33	Vdd	–	5 V ± 10%
34	Vcc	–	Vdd – 35 V MAX.
35	NC		Not connected
36 ~ 44	G1 ~ G9	O	Exclusively used for grid outputs
45	Vdd	–	5 V ± 10%
46 ~ 48	NC	O	Not connected
49	OTPB LED 'H'	O	OTPB LED Driver (OTPB mode "H")
50	NC	O	Not connected
51	Vss	–	Connected to system ground
52	OSC	–	For the connection of resistors that determine the oscillation frequency

MECHANICAL EXPLODED VIEW 1/1



8
B
B
7
A
A
A
A
A
C
C
9
6
TU701
4
P.C.B
11
10
DIG501
5
A
P.C.B
P.C.B
3
2
A43
1
(HV-FX7750/FX5700 Models)
3
2
A43
1
(HV-FX990/GX935/GX915 Models)

MECHANICAL MAIN PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

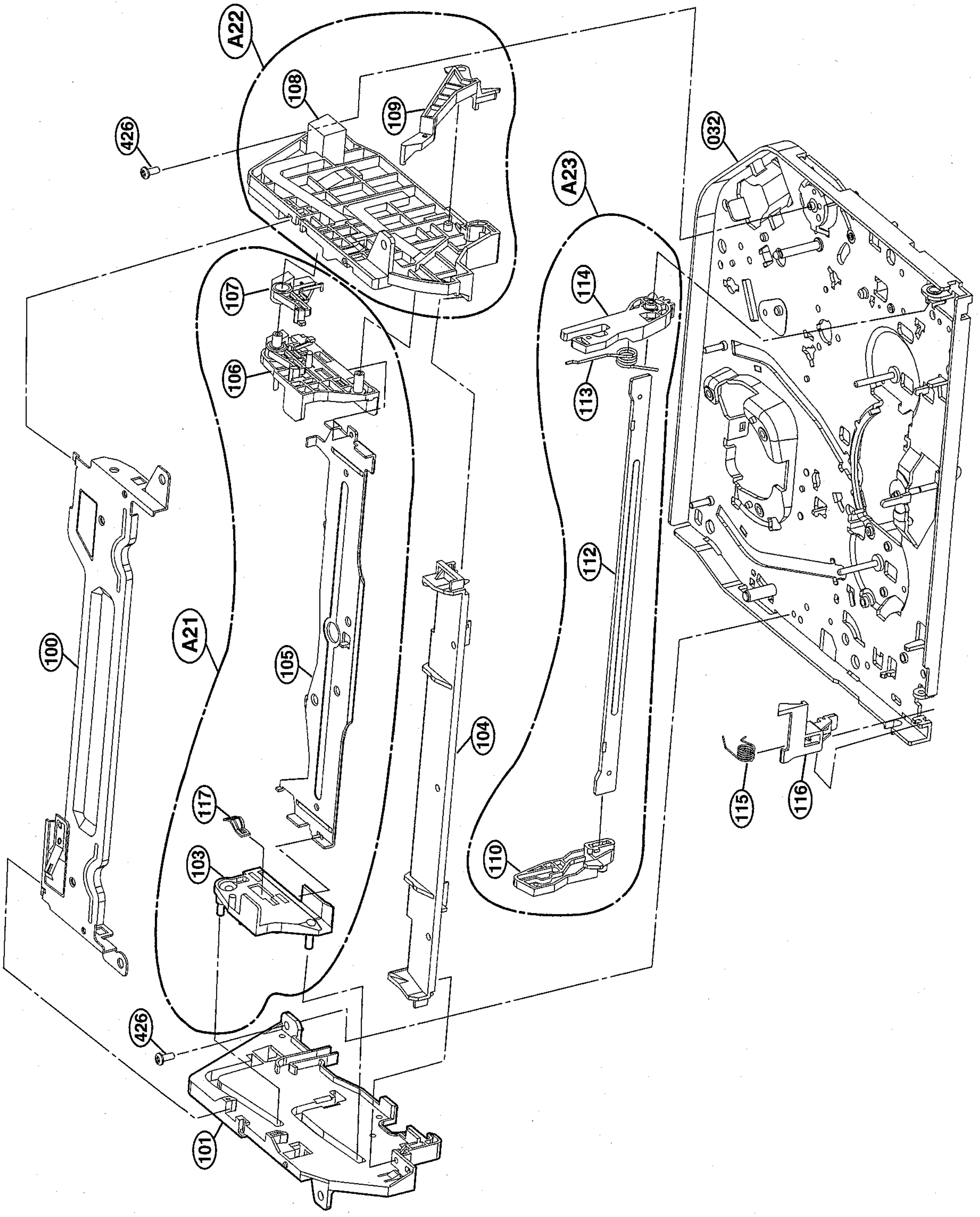
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	——		PANEL FRONT NSP
2	S4-426-81A-000		SPR,DOOR
3	S5-80R-003-3U0		DOOR CST(915LE)<91>
3	S5-80R-003-3T0		DOOR CST(935LE)<93>
3	S5-80R-003-3S0		DOOR CST(990LE)<99>
3	S5-80R-V00-1F0		DOOR CST(5700LE)<57>
3	S5-80R-V00-1A0		DOOR CST<77>
4	——		DECK ASSY,VIDEO D33K-2HD/PAL<91,93>
4	——		DECK ASSY,VIDEO D33K-4HD/PAL<99>
4	——		DECK ASSY,VIDEO D33K-4HF/PAL<57,77>
5	S5-50R-021-0A0		COVER BOTTOM
6	——		FRAME,MAIN
7	S1-10R-012-8U0		CASE,TOP
⚠ 8	S4-10R-CHD-01A		POWER CORD
9	S7-20R-D02-0B0		PANEL DISTRIBUTOR(PAL-SCART<91,93,99>
9	S7-20R-D02-0C0		PANEL DISTRIBUTOR(PAL-2SCART<57,77>
10	S9-30R-013-3A0		HOLDER DIGITRON<93>
10	S9-30R-013-3B0		HOLDER DIGITRON<91>
11	S1-11R-008-9B0		CASE ASSY
A	87-741-097-410		SCREW,3-12
B	S3-531-36A-000		SCREW,SPECIAL(FBK)
C	S3-530-51A-000		SCREW,SPECIAL
A43	S7-21R-F09-5P0		PANEL ASSY,FRONT<91>
A43	S7-21R-F09-5M0		PANEL ASSY,FRONT<93>
A43	S7-21R-F09-5G0		PANEL ASSY,FRONT<99>
A43	S7-21R-F13-5K0		PANEL ASSY,FRONT<57>
A43	S7-21R-F13-5A0		PANEL ASSY,FRONT<77>

TYPE	MODEL NAME	SUFFIX
<77>	HV-FX7750	LE
<57>	HV-FX5700	LE
<99>	HV-FX990	LE
<93>	HV-GX935	LE
<91>	HV-GX915	LE

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink

MECHANISM EXPLODED VIEW 1/3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108
109
426
032
A23
114
107
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113
112
100
A21
105
104
117
103
110
115
116
426
101

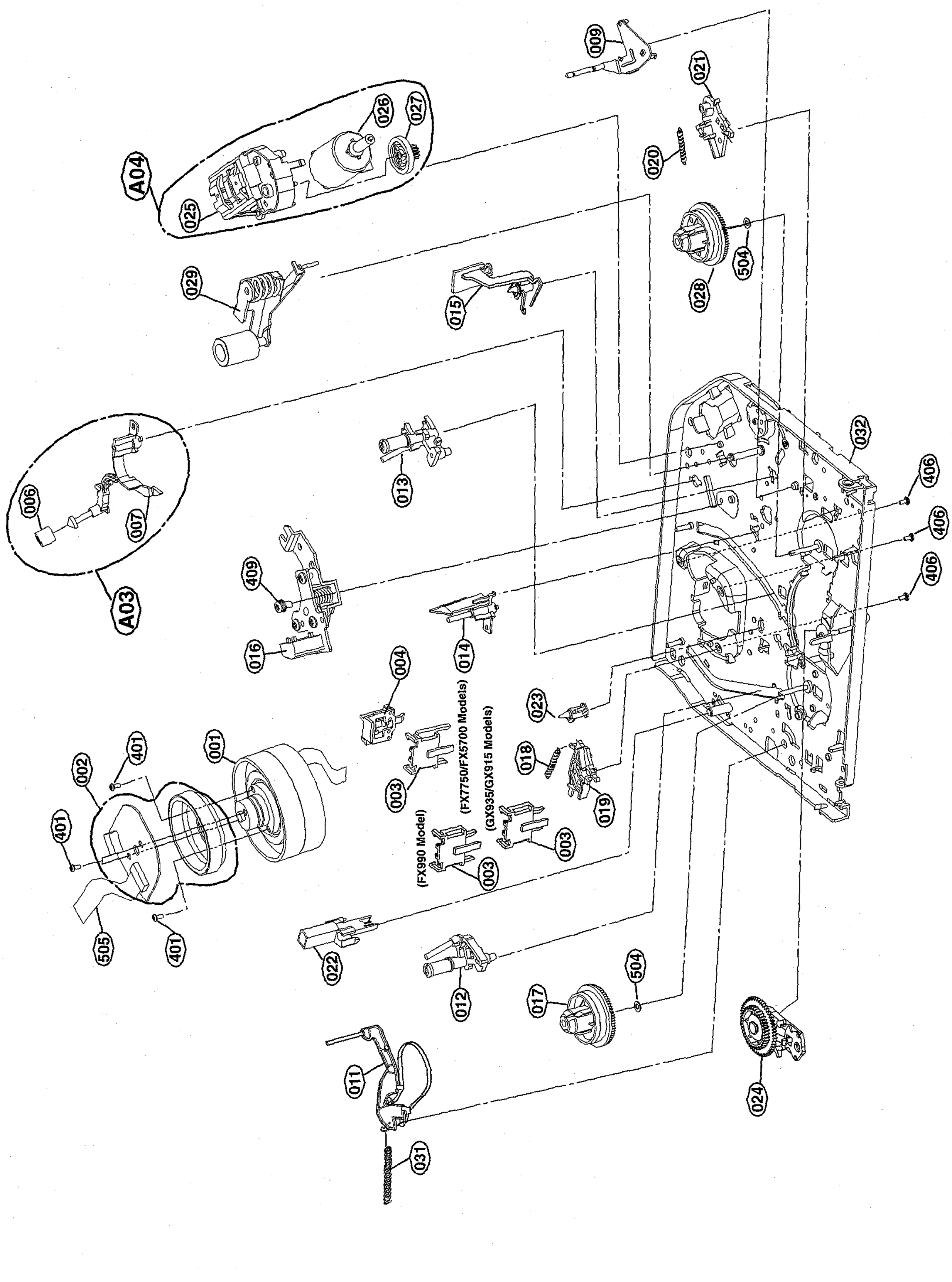
MECHANISM MAIN PARTS LIST 1/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
032	S1-41R-000-2B0		CHASSIS ASSY D33
100	S3-01R-003-2A0		PLATE ASSY TOP
101	S8-10R-006-8A0		BRACKET SIDE(L)
103	——		HOLDER SIDE(L)
104	S9-74R-001-9A0		GUIDE CST
105	——		HOLDER CST
106	——		HOLDER SIDE(R)
107	——		LEVER STOPPER(R)
108	——		BRACKET SIDE(R)
109	——		OPENER DOOR
110	——		ARM,F/L (L)
112	——		BODY F/L
113	——		SPRING F/L(R)
114	——		ARM F/L(R)
115	S9-70R-005-0A0		SPRING SWITCH
116	S5-10R-002-0A0		LEVER SWITCH
117	——		SPR,PLATE
426	87-261-094-410		PAN HEAD SCREW 3-6
A21	S9-31R-003-1A0		HOLDER ASSY
A22	S8-11R-001-8A0		BRACKET ASSY DOOR
A23	S2-61R-001-6A0		ARM ASSY F/L

TYPE	MODEL NAME	SUFFIX
<77>	HV-FX7750	LE
<57>	HV-FX5700	LE
<99>	HV-FX990	LE
<93>	HV-GX935	LE
<91>	HV-GX915	LE

MECHANISM EXPLODED VIEW 2/3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021
020
026
027
A04
025
028
504
029
015
032
013
006
007
A03
406
406
406
409
016
004
014
023
(FX7750/FX5700 Models)
(GX935/GX915 Models)
018
019
401
001
002
003
003
003
(FX990 Model)
401
401
505
022
012
504
017
024
011
031

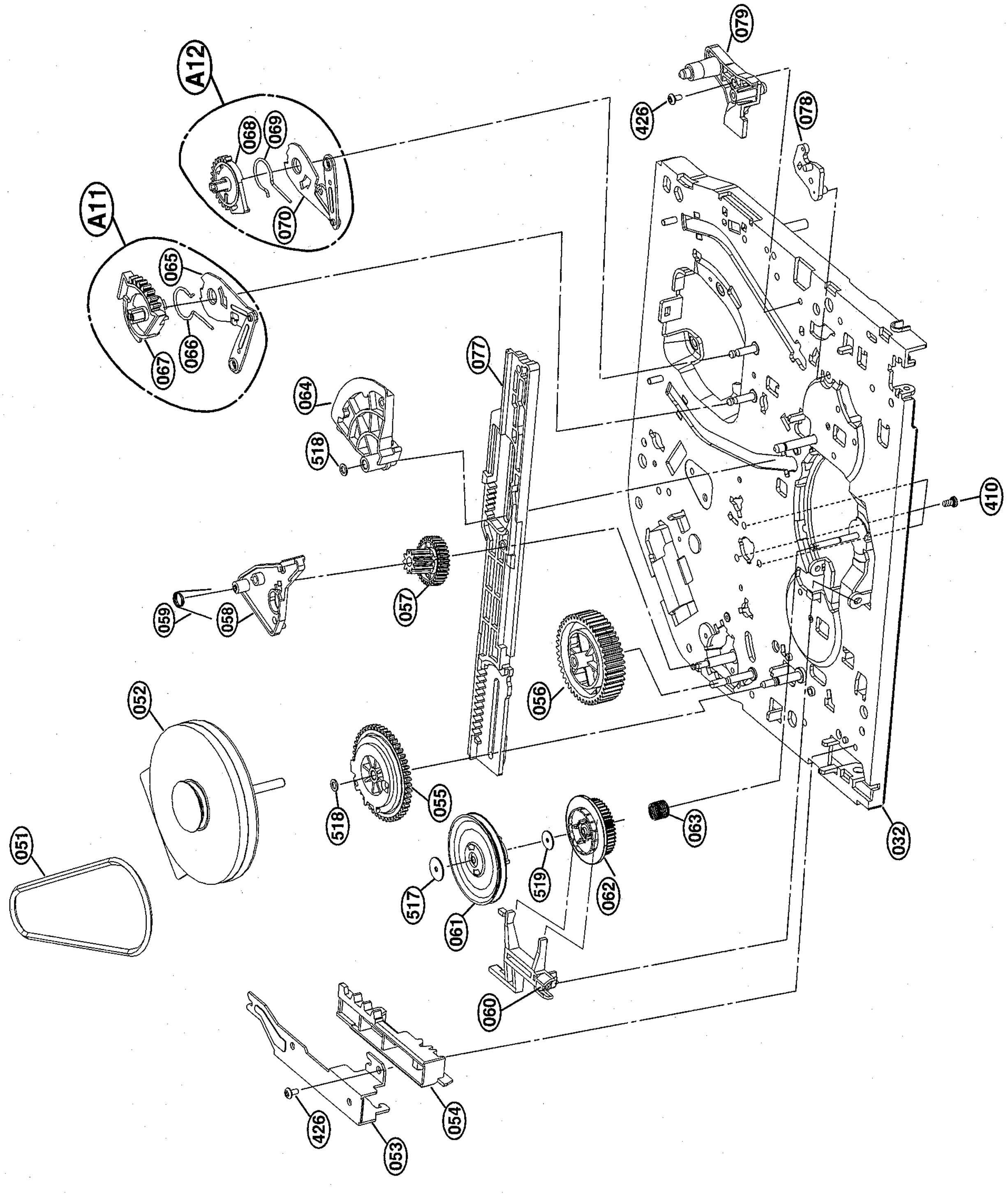
MECHANISM MAIN PARTS LIST 2/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
001	S7-23R-010-4A0		DRUM ASSY SUB D33-2CH<91,93>
001	S7-23R-010-5E0		DRUM ASSY SUB D33-4CH PAL<99>
001	S7-23R-010-6E0		DRUM ASSY SUB D33-6CH PAL<57,77>
002	S6-80R-B00-04B		MOTOR(MECH)DRUM
003	S9-30R-010-6A0		HOLDER FPC(2CH)<91,93>
003	S9-30R-010-7A0		HOLDER FPC(4CH)<99>
003	S9-30R-010-8A0		HOLDER FPC(6CH)<57,77>
004	S0-06R-002-0A0		CAP,FPC
006	——		ROLLER CLEANER
007	——		ARM CLEANER
009	S2-61R-001-7A0		ARM ASSY T/UP(D-33K)
011	S2-61R-001-8A0		ARM ASSY TENSION (D-33K)
012	S0-41R-000-3A0		BASE ASSY P2
013	S0-41R-000-4A0		BASE ASSY P3
014	S0-41R-000-7A0		BASE ASSY P4
015	S8-70R-000-3A0		OPENER LID
016	S0-41R-000-5F0		BASE ASS A/C HEAD
017	S4-08R-000-1B0		REEL S
018	S9-70R-005-4A0		SPRING SB
019	S4-21R-000-3A0		BRAKE ASSY S
020	S9-70R-005-3A0		SPRING TB
021	S4-21R-000-4A0		BRAKE ASSY T
022	S5-238-33B-000		HEAD FE D33
023	S9-80R-001-0A0		SUPPORTER CST
024	S2-61R-001-3A0		ARM ASSY IDLER
025	——		BRACKET L/D MOTOR
026	——		MOTOR ASSY L/D
027	S4-70R-002-5A0		GEAR WHEEL
028	S4-08R-000-2B0		REEL T
029	S2-61R-001-1A0		ARM ASSY PINCH
031	S9-70R-006-9A0		SPRING TENSION
032	S1-41R-000-2B0		CHASSIS ASSY D33
401	SM-PC0-261-418		SCREW,2.6-4.0
406	87-261-094-410		PAN HEAD SCREW 3-6
409	87-741-095-410		SCREW,PAN HEAD 3.0-8.0
504	S3-540-01B-000		WASHER,P.S 3.1-6-0.5
505	S8-790-19K-000		FFC,7P
A03	S2-61R-001-5A0		CLEANER ARM ASSY
A04	S8-11R-001-9A0		BRACKET ASSY L/D MOTOR

TYPE	MODEL NAME	SUFFIX
<77>	HV-FX7750	LE
<57>	HV-FX5700	LE
<99>	HV-FX990	LE
<93>	HV-GX935	LE
<91>	HV-GX915	LE

MECHANISM EXPLODED VIEW 3/3


A12
068
069
070
079
426
078
A11
065
066
067
077
064
518
410
057
058
059
056
052
055
518
032
051
063
517
061
519
062
060
054
426
053

MECHANISM MAIN PARTS LIST 3/3

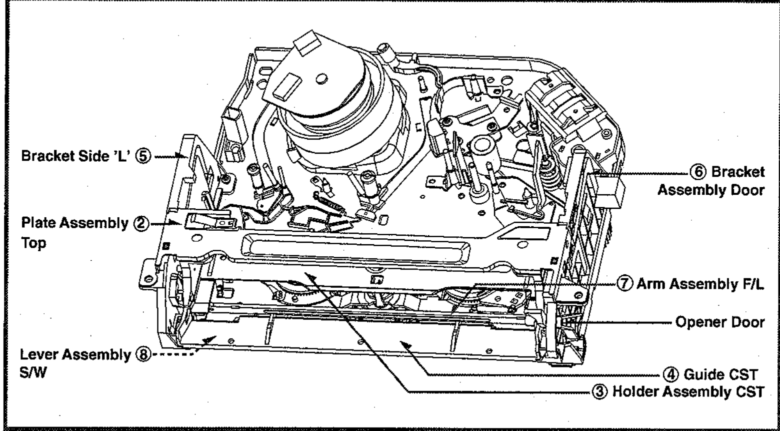
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

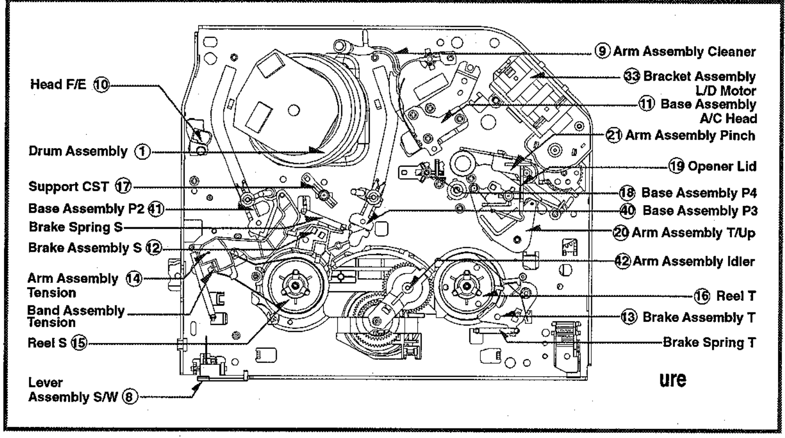
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
032	S1-41R-000-2B0		CHASSIS ASSY D33
051	S4-00R-000-5A0		BELT CAPSTAN
052	S6-80R-A00-03A		MOTOR(MECH)
053	S9-74R-001-8A0		GUIDE RACK F/L
054	S4-70R-003-7A0		GEAR RACK F/L
055	S4-70R-003-3A0		GEAR DRIVE
056	S4-70R-003-2B0		GEAR,CAM
057	S4-70R-003-6B0		GEAR CONNECT
058	S4-20R-000-5A0		BRAKE CAPSTAN
059	S9-70R-005-9A0		SPRING CAPSTAN
060	S5-10R-002-5B0		F/R LEVER
061	S2-65R-000-3A0		CLUTCH ASSY D33K
062	S4-70R-005-8A0		GEAR,UP/D33K
063	S9-70R-005-1A0		SPRING UP/D
064	S4-70R-003-4A0		GEAR SECTOR
065	——		LEVER P3
066	——		SPRING L/D
067	——		GEAR P3
068	——		GEAR P2
069	——		SPRING L/D
070	——		LEVER P2
077	S3-00R-015-7A0		PLATE SLIDER
078	S5-10R-002-2A0		LEVER TENSION
079	S0-40R-002-1A0		BASE,TENSION(D-33K)
410	SA-PF0-262-218		SCREW,PAN HEAD 2.6-6.8
426	87-261-094-410		PAN HEAD SCREW 3-6
517	SW-ZZR-000-4B0		WASHER STOPPER
518	SW-ZZR-000-4A0		WASHER STOPPER
519	SW-ZZR-000-4D0		WASHER STOPPER
A11	S4-70R-002-8A0		GEAR ASSY P3
A12	S4-70R-002-6A0		GEAR ASSY P2

TYPE	MODEL NAME	SUFFIX
<77>	HV-FX7750	LE
<57>	HV-FX5700	LE
<99>	HV-FX990	LE
<93>	HV-GX935	LE
<91>	HV-GX915	LE

DECK MECHANISM PARTS LOCATIONS

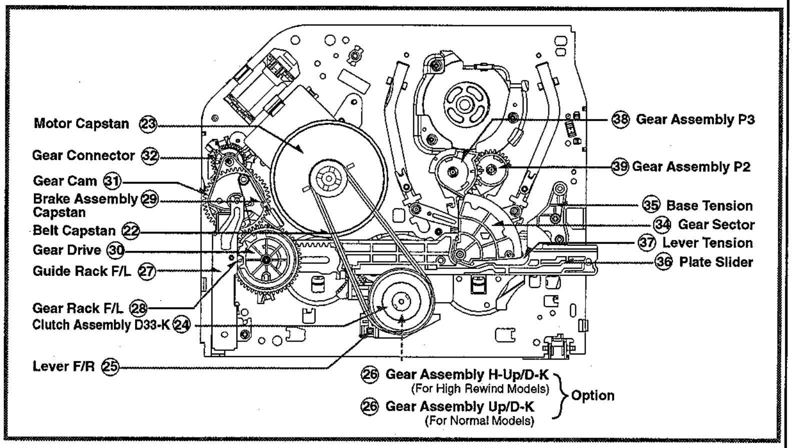
• Top View


Bracket Side 'L' ⑤
Plate Assembly ② Top
Lever Assembly ⑧ S/W
⑥ Bracket Assembly Door
⑦ Arm Assembly F/L
Opener Door
④ Guide CST
③ Holder Assembly CST


Head F/E ⑩
Drum Assembly ①
Support CST ⑰
Base Assembly P2 ㊶
Brake Spring S
Brake Assembly S ⑫
Arm Assembly ⑭ Tension
Band Assembly Tension
Reel S ⑮
Lever Assembly S/W ⑧
⑨ Arm Assembly Cleaner
㉝ Bracket Assembly L/D Motor
⑪ Base Assembly A/C Head
㉑ Arm Assembly Pinch
⑲ Opener Lid
⑱ Base Assembly P4
㊵ Base Assembly P3
⑳ Arm Assembly T/Up
㊷ Arm Assembly Idler
⑯ Reel T
⑬ Brake Assembly T
Brake Spring T
ure

Starting No.	Pracedure	Part	Fixing Type	Fig-ure
	1	Drum Assembly	3 Screws , Cap FPC	A-1
	2	Plate Assembly Top	Two Hooks	A-2
2	3	Holder Assembly CST	Chassis Hole	A-2
	4	Guide CST	2 Hooks	A-2
2,3,4	5	Bracket Side (L)	1 Screw	A-2
2,3,4	6	Bracket Assembly Door	1 Screw	A-2
2,3,4,5,6	7	Arm Assembly F/L	Chassis Hole	A-2
2,3,4,5	8	Lever Assembly S/W	Chassis Hole	A-2
	9	Arm Assembly Cleaner	Chassis Embossing	A-3
	10	Head F/E	2 Hooks	A-3
	11	Base Assembly A/C Head	1 Screw	A-3
	12	Brake Assembly S	Chassis Hole	A-4
2,3	13	Brake Assembly T	Chassis Hole	A-4
2,3,12,	14	Arm Assembly Tension	Chassis Hole	A-4
2,3,12,14	15	Reel S	Chassis Shaft	A-4
2,3,13	16	Reel T	Chassis Shaft	A-4
	17	Support CST	Chassis Embossing	A-5
	18	Base Assembly P4	Chassis Embossing	A-5
	19	Opener Lid	Chassis Embossing	A-5
19	20	Arm Assembly T/Up	Chassis Embossing	A-5
19	21	Arm Assembly Pinch	Chassis Shaft	A-5

• Bottom View


Motor Capstan ㉓
Gear Connector ㉜
Gear Cam ㉛
Brake Assembly ㉙ Capstan
Belt Capstan ㉒
Gear Drive ㉚
Guide Rack F/L ㉗
Gear Rack F/L ㉘
Clutch Assembly D33-K ㉔
Lever F/R ㉕
㊳ Gear Assembly P3
㊴ Gear Assembly P2
㉟ Base Tension
㉞ Gear Sector
㊲ Lever Tension
㊱ Plate Slider
㉖ Gear Assembly H-Up/D-K (For High Rewind Models)
㉖ Gear Assembly Up/D-K (For Normal Models)
Option

Starting No.	Pracedure	Part	Fixing Type	Fig-
	22	Belt Capstan		A-6
22	23	Motor Capstan	3 Screws	A-6
	24	Clutch Assembly D33-K	1 Washer	A-6
22,24	25	Lever F/R	1 Hook	A-6
22,24	26	Gear H-Up/D-K	2 Washers	A-6
	27	Guide Rack F/L	1Screw	A-7
27	28	Gear Rack F/L		A-7
27,28	29	Brake Assembly Capstan	Chassis Shaft	A-7
27,28	30	Gear Drive	1 Washer	A-8
27,28,29	31	Gear Cam	Chassis Shaft	A-8
27,28,29,30	32	Gear Connector	Chassis Shaft	A-8
	33	Bracket Assembly L/D Motor	3 Hooks	A-8
	34	Gear Sector	3 Washers	A-9
	35	Base Tension	1 Screw	A-9
22,24,25, 27,28,30,34 35	36	Plate Slider	Chassis Shaft	A-9
22,24,25, 27,28,30,34 35	37	Lever Tension	Chassis Hole	A-9
34	38	Gear Assembly P3	2 Hooks	A-10
34,38	39	Gear Assembly P2	2 Hooks	A-10
34,38,39	40	Base Assembly P3	Chassis Hole	A-10
34,38,39,40	41	Base Assembly P2	Chassis Hole	A-10
1,2	42	Arm Assembly Idler	1 Hook	A-10

NOTE : When reassembly perform the procedure in the reverse order.

1) When reassembling, confirm Mechanism and Mode Switch Alignment Position (Refer to Page 79)
2) When disassembling, the Parts for Starting No. Should be removed first.

DECK MECHANISM DISASSEMBLY

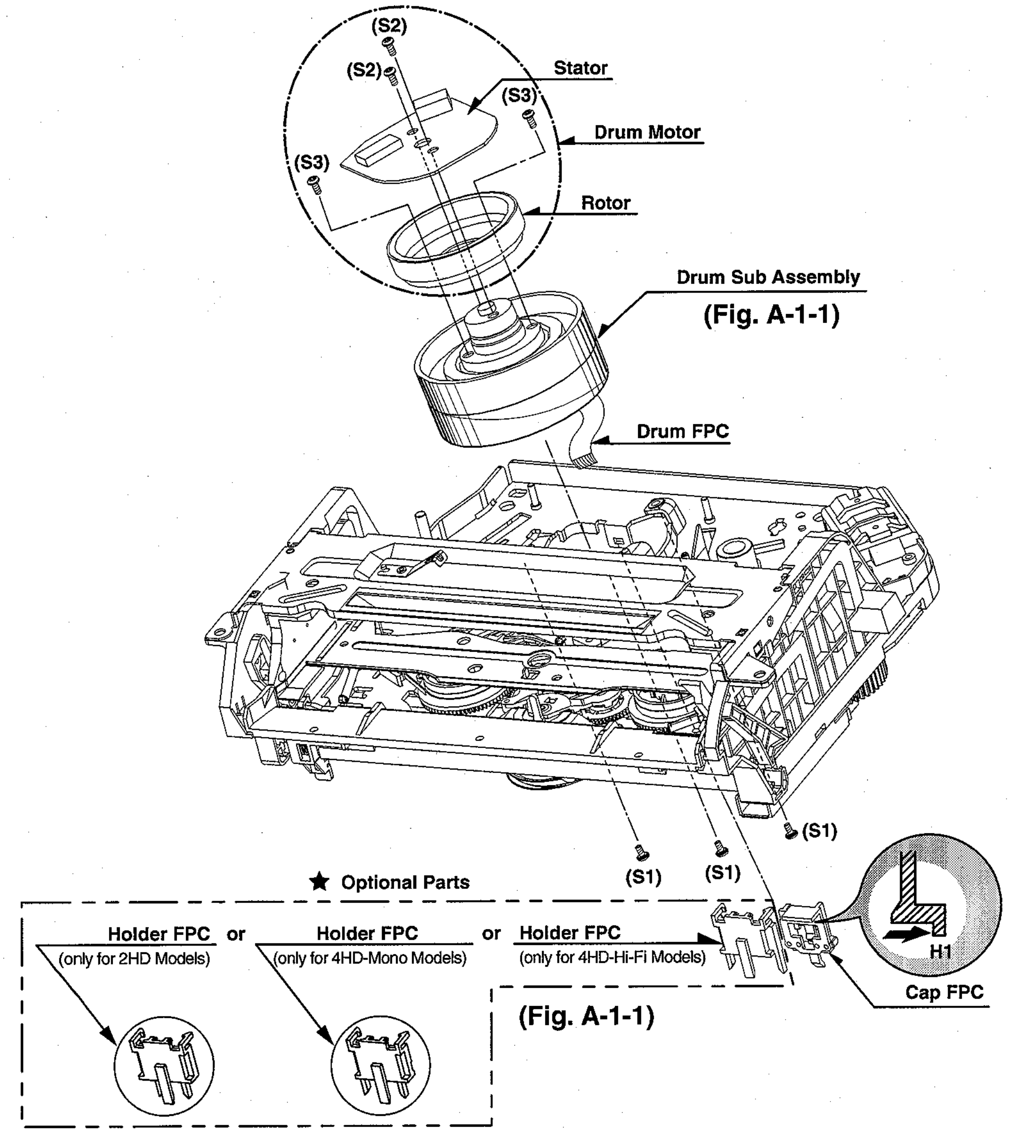

(S2)
(S2)
Stator
(S3)
Drum Motor
(S3)
Rotor
Drum Sub Assembly
(Fig. A-1-1)
Drum FPC
(S1)
(S1)
(S1)
★ Optional Parts
Holder FPC
(only for 2HD Models)
or
Holder FPC
(only for 4HD-Mono Models)
or
Holder FPC
(only for 4HD-Hi-Fi Models)
H1
Cap FPC
(Fig. A-1-1)

Fig. A-1

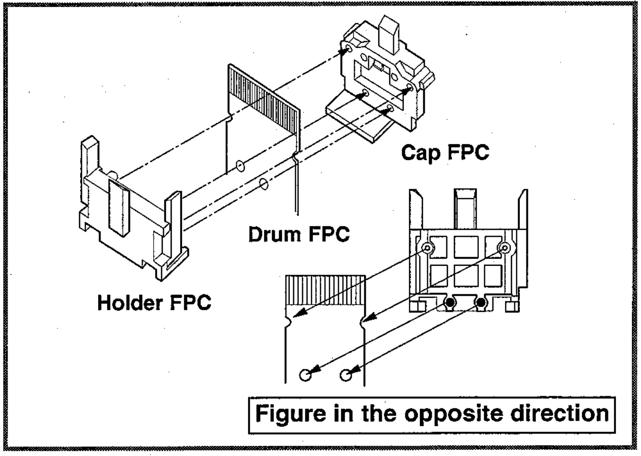
1. Drum Assembly (Fig. A-1-1)

1) Unhook the (H1) on the back side of the Chassis and separate the Cap FPC.
2) Remove three Screws (S1) and lift up the Drum Assembly.
3) Remove two Screws (S2) and Separate the Stator of Drum Motor.
4) Remove two Screws (S3) and Separate the Rotor of Drum Motor from the Drum Sub Assembly.

NOTE

(1) When reassembling Cap FPC, two Holes of Drum FPC are inserted to the two Bosses of Holder FPC correctly. (Refer to Fig. B-1)

(Fig. B-1)


Cap FPC
Drum FPC
Holder FPC
Figure in the opposite direction

DECK MECHANISM DISASSEMBLY

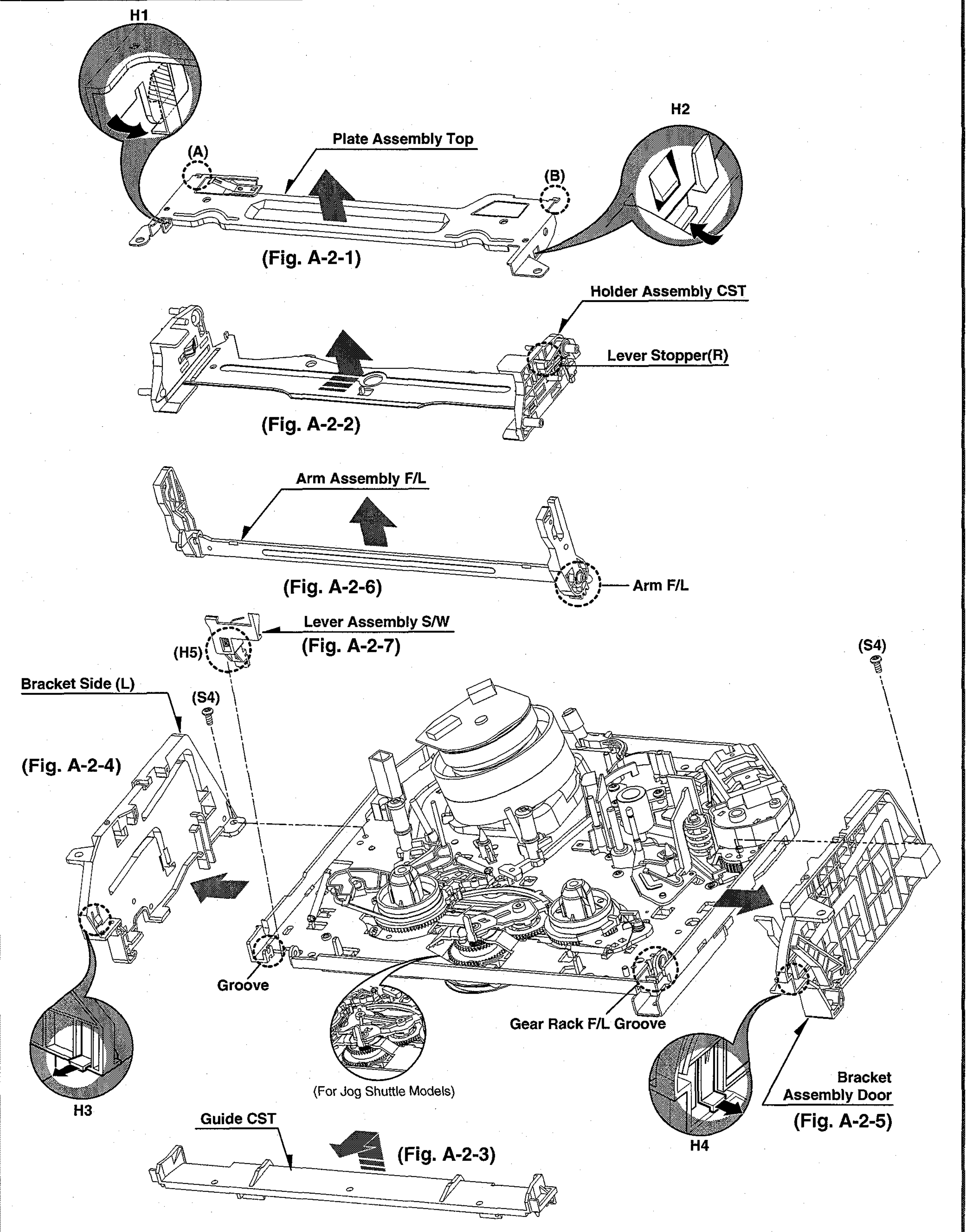

H1
H2
Plate Assembly Top
(A)
(B)
(Fig. A-2-1)
Holder Assembly CST
Lever Stopper(R)
(Fig. A-2-2)
Arm Assembly F/L
(Fig. A-2-6)
Arm F/L
Lever Assembly S/W
(H5)
(Fig. A-2-7)
(S4)
Bracket Side (L)
(S4)
(Fig. A-2-4)
Groove
Gear Rack F/L Groove
(For Jog Shuttle Models)
H3
Guide CST
(Fig. A-2-3)
Bracket Assembly Door
(Fig. A-2-5)
H4

Fig. A-2

DECK MECHANISM DISASSEMBLY

2. Plate Assembly Top (Fig. A-2-1)

1) Unhook the (H1) and separate the Left Side.
2) Unhook the (H2) and lift up the Plate Assembly Top.

NOTE

(1) When reassembling, confirm (A),(B) Part of the Plate Assembly Top is inserted to the (L),(R) Grooves of the Bracket Side(L) and Bracket Assembly Door.

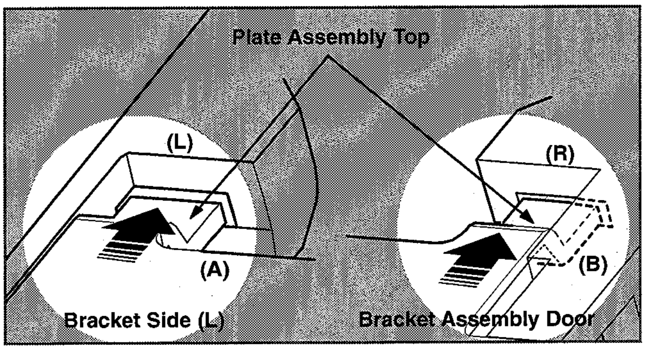
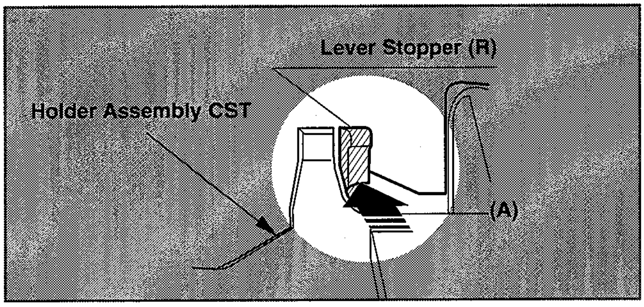


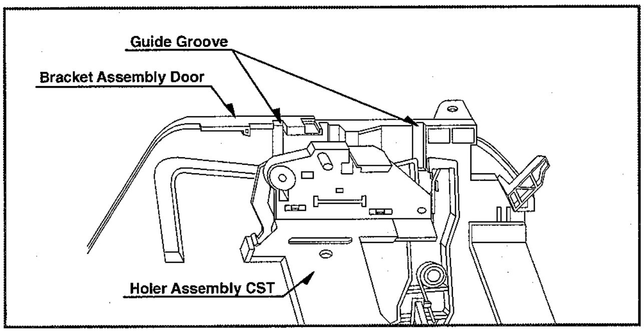
Plate Assembly Top
(L)
(R)
(A)
(B)
Bracket Side (L)
Bracket Assembly Door

3. Holder Assembly CST (Fig.A-2-2)

1) Push the Lever Stopper (R) in the direction of the arrows (A) and move the Holder Assembly CST.

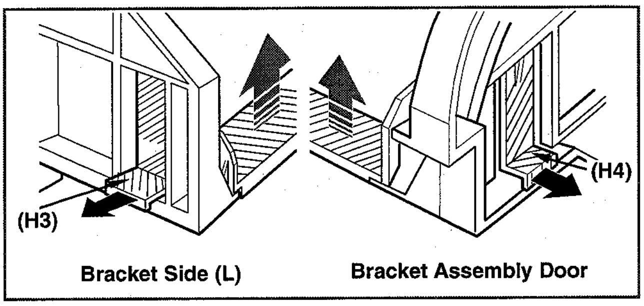

Lever Stopper (R)
Holder Assembly CST
(A)

2) Push the Bracket Assembly Door to the right and lift up the Holder Assembly CST along the Guide Groove of the Bracket Assembly Door.


Guide Groove
Bracket Assembly Door
Holer Assembly CST

4. Guide CST (Fig.A-2-3)

1) Unhook(H3) in the direction of the arrow and separate the left side.
2) Unhook (H4) as above No.1) and disassemble the Guide CST in the direction of the arrow.


(H3)
(H4)
Bracket Side (L)
Bracket Assembly Door

5. Bracket Side(L) (Fig. A-2-4)/ Bracket Assembly Door (Fig.A-2-5)

1) Remove the Screw (S4) and disassemble the Bracket Side(L) in the front.
2) Remove the Screw (S4) and disassemble the Bracket Assembly Door in the front.

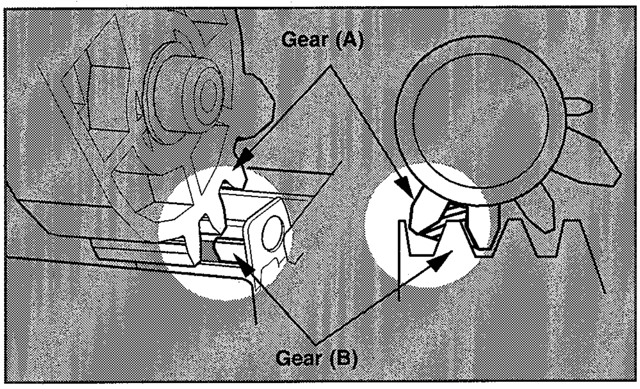
6. Arm Assembly F/L (Fig. A-2-6)

1) Push the Arm Assembly F/L to the left and lift up it.

NOTE

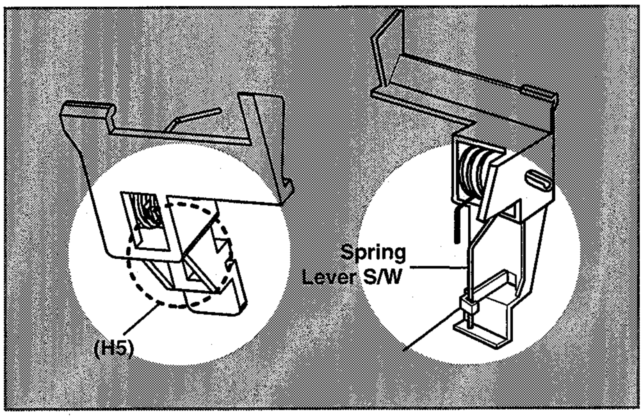
(1) When reassembling, confirm that the Gear(A) of the Arm F/L and the Gear(B) of the Gear Rack F/L are assembled as below.

(H5)


Gear (A)
Gear (B)

7. Lever Assembly S/W (Fig. A-2-7)

1) Hook the Spring Lever S/W on (H5).
2) Lift up the left side of the Lever S/W from the Groove(A) of the Chassis.


Spring Lever S/W
(H5)

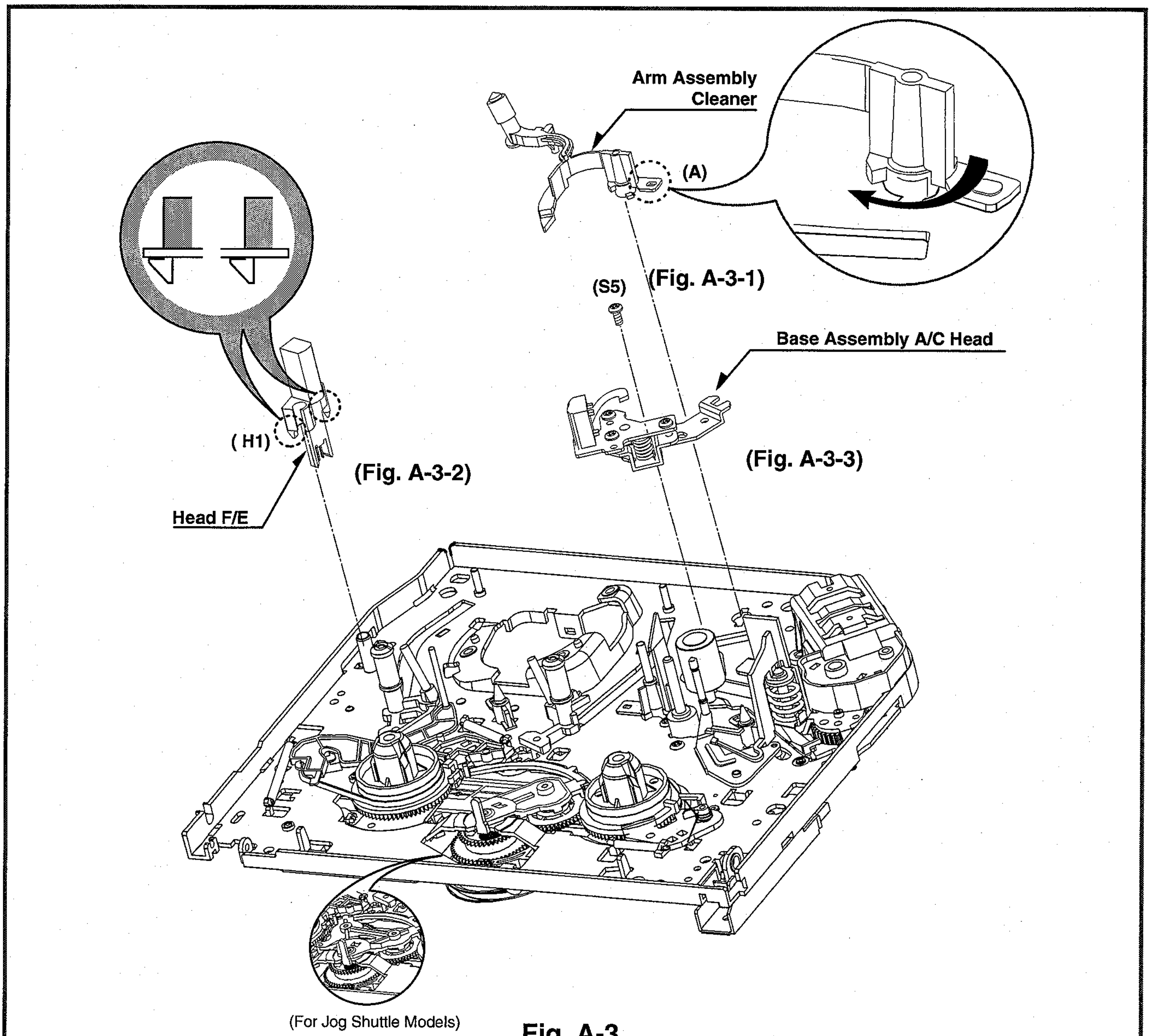
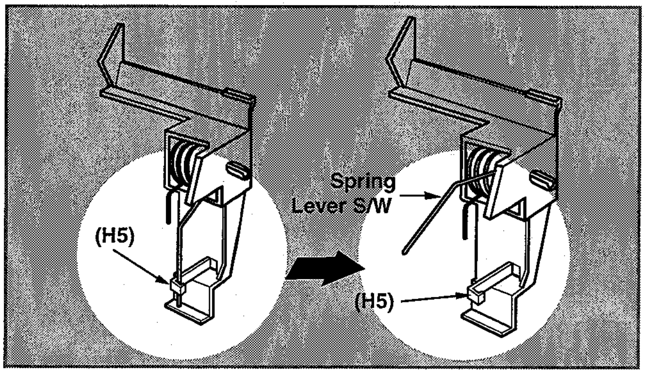

Arm Assembly Cleaner
(A)
(S5)
(Fig. A-3-1)
Base Assembly A/C Head
(H1)
(Fig. A-3-2)
(Fig. A-3-3)
Head F/E
(For Jog Shuttle Models)

Fig. A-3

NOTE

(1) Place the Spring Lever S/W of the above (No.1) as original position.


Spring Lever S/W
(H5)
(H5)

8. Arm Assembly Cleaner(Fig. A-3-1)

1) Break away the (A) part shown above Fig. A-3-1 from the Embossing of the Chassis in the clockwise direction and lift up the Arm Assembly Cleaner.

9. Head F/E (Fig. A-3-2)

1) Unhook the two Hooks (H1) on the back side of the Chassis and lift up the Head F/E.

10. Base Assembly A/C Head (Fig. A-3-3)

1) Remove the Screw (S5) and lift up the Base Assembly A/C Head.

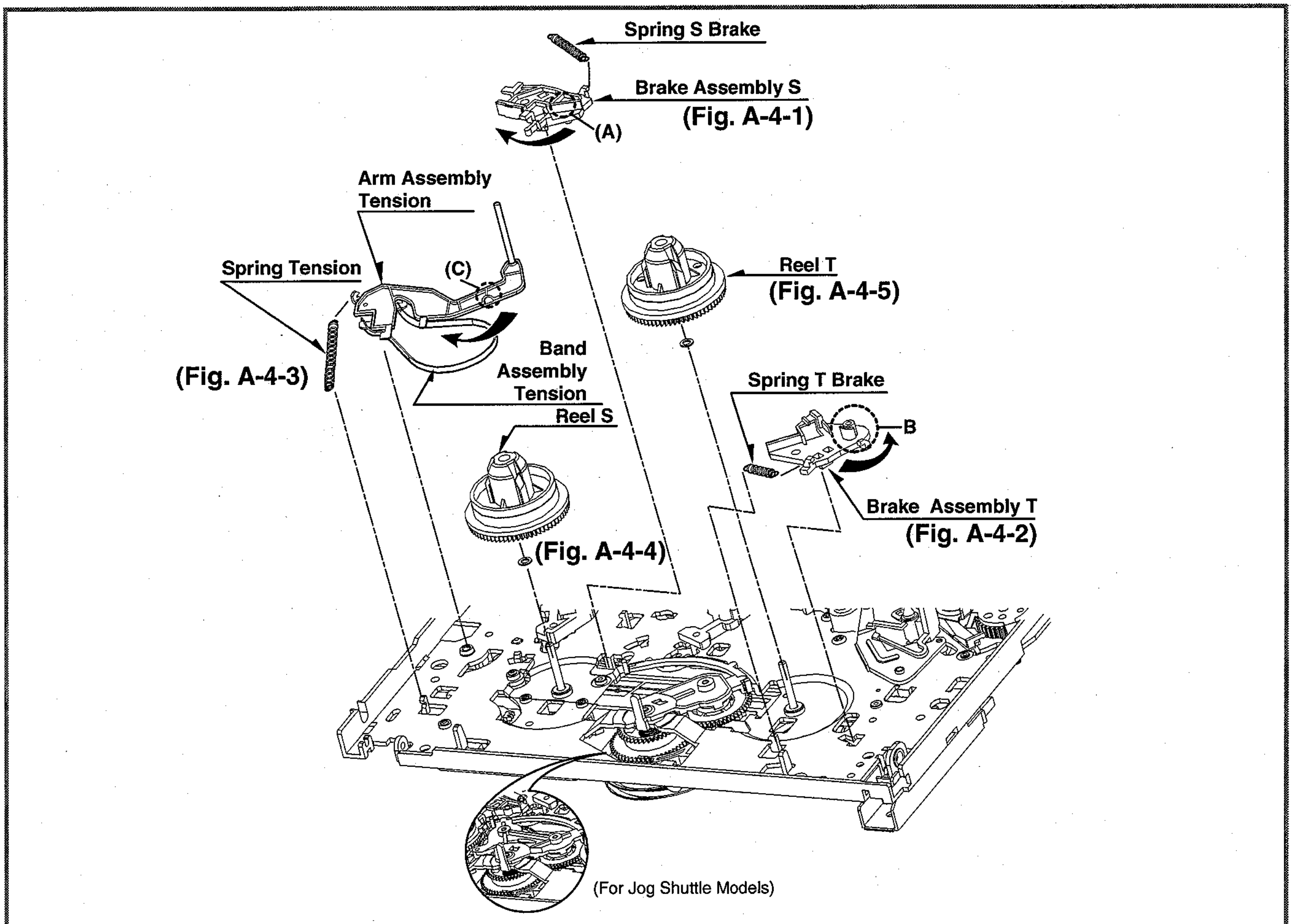

Spring S Brake
Brake Assembly S
(Fig. A-4-1)
(A)
Arm Assembly Tension
Spring Tension
(C)
Reel T
(Fig. A-4-5)
(Fig. A-4-3)
Band Assembly Tension
Reel S
Spring T Brake
B
Brake Assembly T
(Fig. A-4-2)
(Fig. A-4-4)
(For Jog Shuttle Models)

Fig. A-4

11. Brake Assembly S (Fig. A-4-1)

1) Remove the Spring S Brake.
2) Hold the (A) part shown above Fig. A-4-1 and turn to the clockwise direction, and then lift up the Brake Assembly S.

NOTE

(1) When reassembling, be careful not to change the Spring with below No.12.(Refer to Fig. B-2).

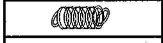
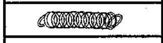
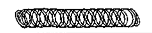
12. Brake Assembly T (Fig. A-4-2)

1) Remove the Spring T Brake.
2) Hold the (B) part shown above Fig. A-4-2 and turn to the counterclockwise direction, and then lift up the Brake Assembly T.

NOTE

(1) When reassembling, be careful not to change the Spring with above No.11.(Refer to Fig. B-2).

(Difference for Springs) (Fig. B-2)

	**Spring T Brake** Color (Black)
	**Spring S Brake**
	**Spring Tension**

13. Arm Assembly Tension (Fig. A-4-3)

1) Remove the Spring Tension.
2) Hold the (C) part shown above Fig. A-4-3 and turn to the clockwise direction, and then lift up the Arm Assembly Tension.

NOTE

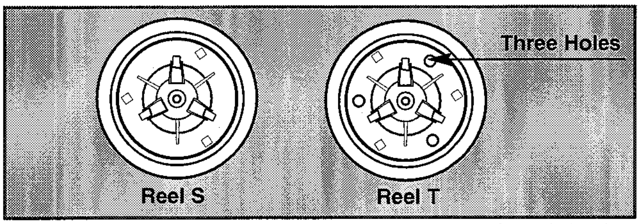
(1) When reassembling, be careful not to change the Spring with above No.11,12.(Refer to Fig. B-2).

14. Reel S (Fig. A-4-4) & Reel T (Fig. A-4-5)

1) Lift up the Reel S and Reel T.

NOTE

(1) When reassembling, be careful not to change the Reel S and Reel T each other.


Three Holes
Reel S
Reel T

(2) Confirm two Slide Washers under the Reel S and Reel T.

DECK MECHANISM DISASSEMBLY

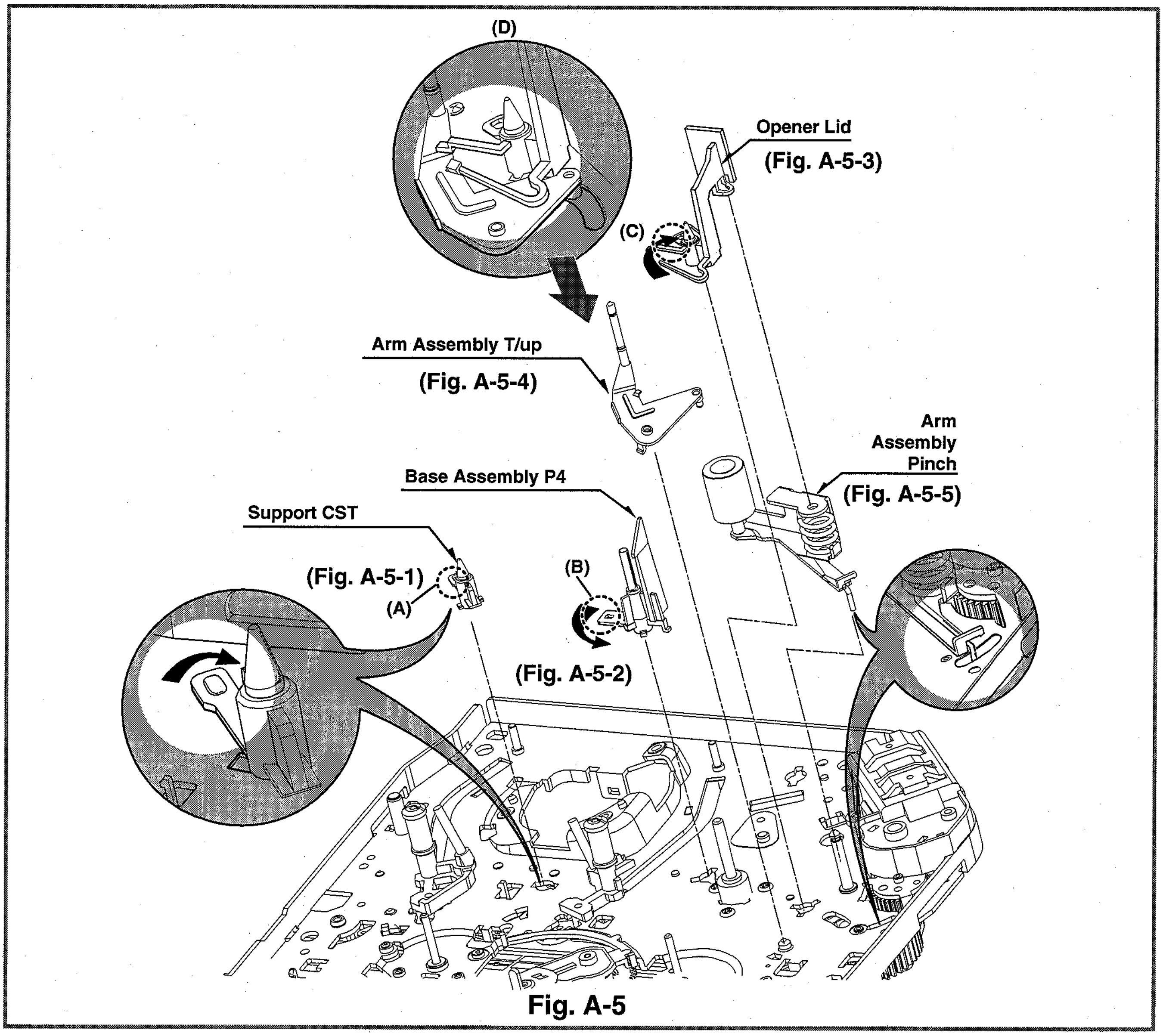

(D)
Opener Lid
(Fig. A-5-3)
(C)
Arm Assembly T/up
(Fig. A-5-4)
Arm
Assembly
Pinch
(Fig. A-5-5)
Base Assembly P4
Support CST
(Fig. A-5-1)
(A)
(B)
(Fig. A-5-2)

Fig. A-5

15. Support CST (Fig. A-5-1)

1) Break away the (A) part shown above Fig. A-5-1 from the Embossing of the Chassis in the clockwise direction, and lift up the Support CST.

16. Base Assembly P4 (Fig. A-5-2)

1) Break away the (B) part shown above Fig. A-5-2 from the Embossing of the Chassis in the counterclockwise direction and lift up the Base Assembly P4.

17. Opener Lid (Fig. A-5-3)

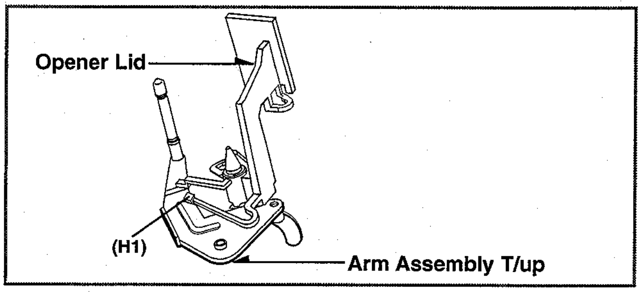
1) Break away the (C) Part of the Opener Lid from the Embossing of the Chassis in the Clockwise direction and lift up the Opener Lid.

18. Arm Assembly T/up (Fig. A-5-4)

1) Just lift up the Arm Assembly T/UP.

NOTE

(1) When reassembling, confirm the opener lid is placed on the Hook(H1) of the Arm Assembly T/UP as below figure.


Opener Lid
(H1)
Arm Assembly T/up

19. Arm Assembly Pinch (Fig. A-5-5)

1) Lift up the Arm Assembly Pinch.

DECK MECHANISM DISASSEMBLY

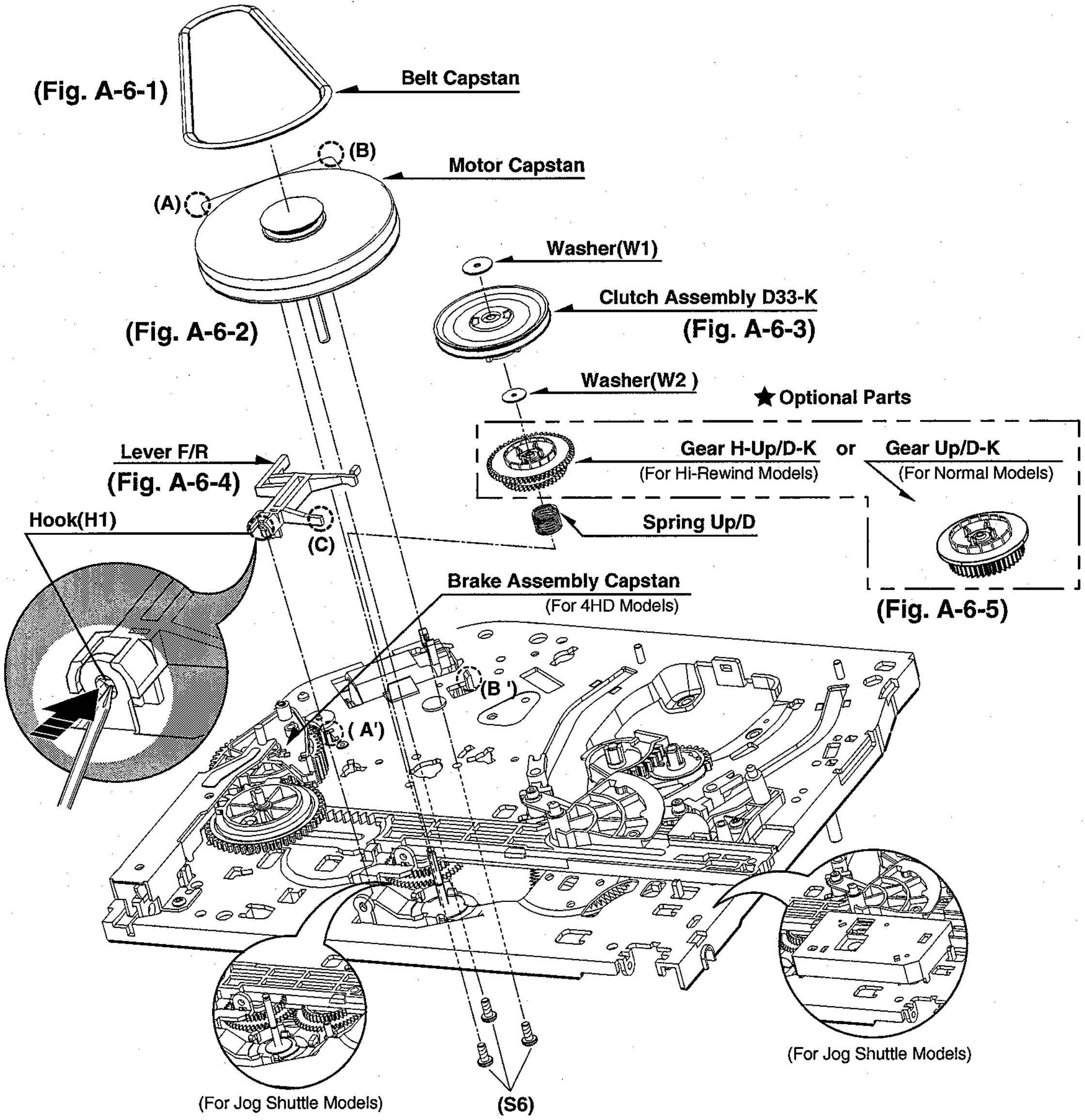

(Fig. A-6-1)
Belt Capstan
(B)
Motor Capstan
(A)
Washer(W1)
Clutch Assembly D33-K
(Fig. A-6-3)
(Fig. A-6-2)
Washer(W2)
★ Optional Parts
Lever F/R
(Fig. A-6-4)
Gear H-Up/D-K or Gear Up/D-K
(For Hi-Rewind Models)
(For Normal Models)
Hook(H1)
Spring Up/D
(C)
Brake Assembly Capstan
(For 4HD Models)
(Fig. A-6-5)
(B ')
(A')
(For Jog Shuttle Models)
(For Jog Shuttle Models)
(S6)

Fig. A-6

20. Belt Capstan (Fig. A-6-1)/ Motor Capstan (Fig. A-6-2)

1) Remove the Belt Capstan.
2) Remove three Screws(S6) on the back side of the Chassis and lift up the Motor Capstan.

NOTE

(1) When reassembling, Confirm the (A), (B) parts of Motor Capstan is located to the (A'), (B') of the Chassis.

21. Clutch Assembly D33-K (Fig. A-6-3)

1) Remove the Washer(W1) and lift up the Clutch Assembly D33-K.

22. Lever F/R (Fig. A-6-4)

1) Unhook the (H1) shown above Fig. A-6-4 and lift up the Lever F/R.

NOTE

(1) When reassembling, move the (C) part of the Lever F/R up and down, then confirm if it is returned to original position.

23. Gear H-Up/D-K or Gear Up/D-K (Fig. A-6-5)

1) Remove the Washer(W2) and lift up the Gear H-up/D-K.
2) Remove the Spring Up/D.

NOTE

(1) Gear H-Up/D-K is for Hi-Rewind Models.
(2) Gear Up/D-K is for Normal Models except Hi-Rewind Models.

DECK MECHANISM DISASSEMBLY

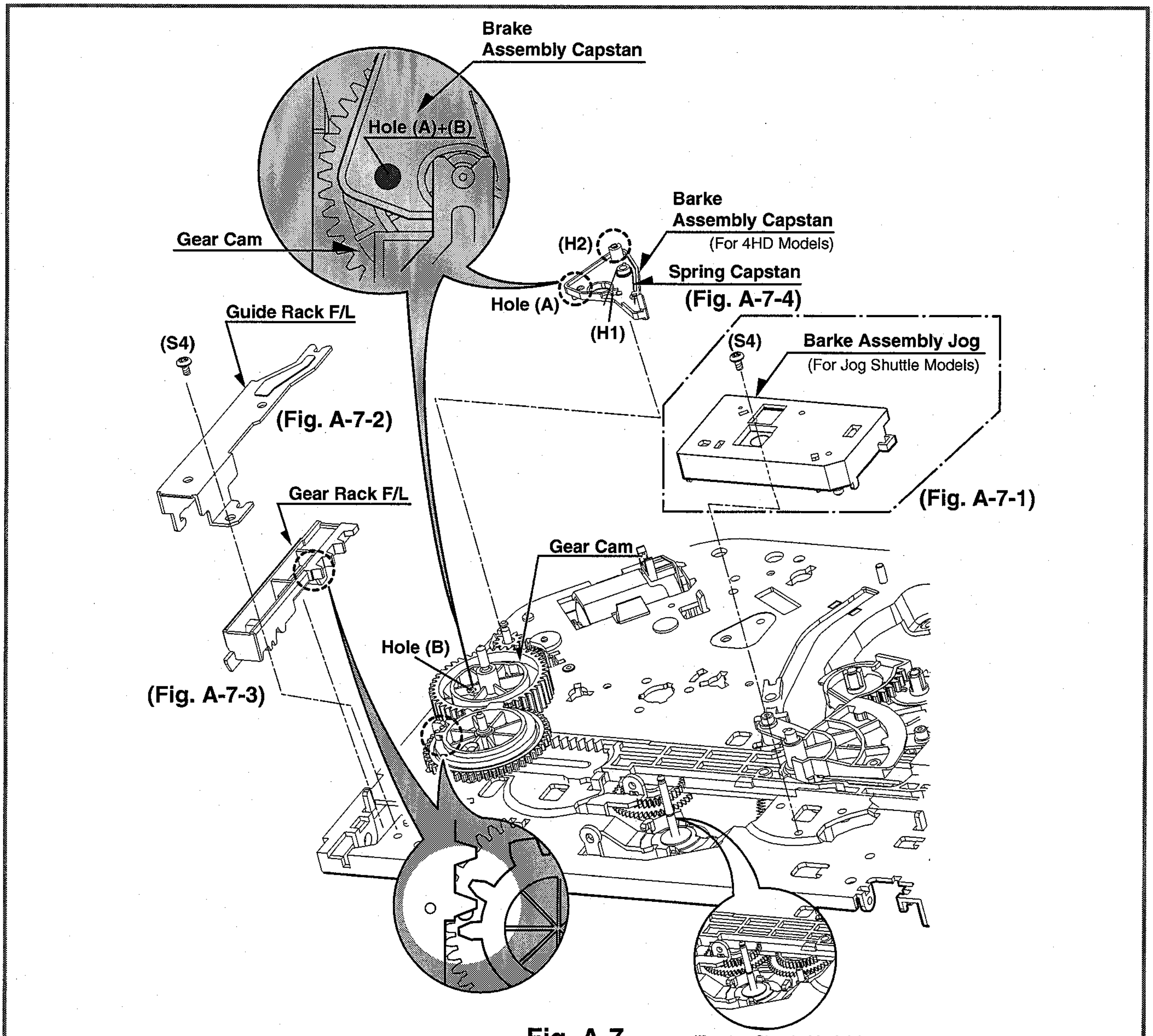

Brake
Assembly Capstan
Hole (A)+(B)
Gear Cam
Barke
Assembly Capstan
(For 4HD Models)
(H2)
Spring Capstan
Hole (A)
(H1)
(Fig. A-7-4)
Guide Rack F/L
(S4)
(S4)
Barke Assembly Jog
(For Jog Shuttle Models)
(Fig. A-7-2)
(Fig. A-7-1)
Gear Rack F/L
Gear Cam
Hole (B)
(Fig. A-7-3)
(For Jog Shuttle Models)

Fig. A-7

24. Bracket Assembly Jog (Fig. A-7-1) (Jog shuttle model option)

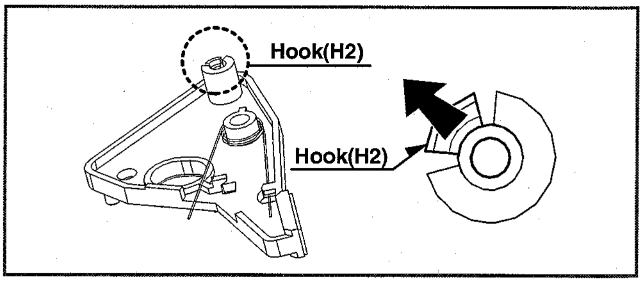
1) Remove the Screw(S4) and lift up the Bracket Assembly Jog.

25. Guide Rack F/L (Fig. A-7-2)/ Gear Rack F/L (Fig. A-7-3)

1) Remove the Screw(S4) and lift up the Guide Rack F/L.
2) Lift up the Gear Rack F/L.

26. Brake Assembly Capstan (Fig. A-7-4) (4HD model option)

1) Hook the Spring Capstan on the Hook(H1).
2) Unhook the Hook(H2) and lift up the Brake Assembly Capstan.(Refer to Fig. to the right)


Hook(H2)
Hook(H2)

NOTE

(1) When reassembling, confirm that the Hole(A) of the Brake Assembly Capstan is aligned to the Hole(B) of the Gear Cam.
(Refer to above Fig. A-7-4).

DECK MECHANISM DISASSEMBLY

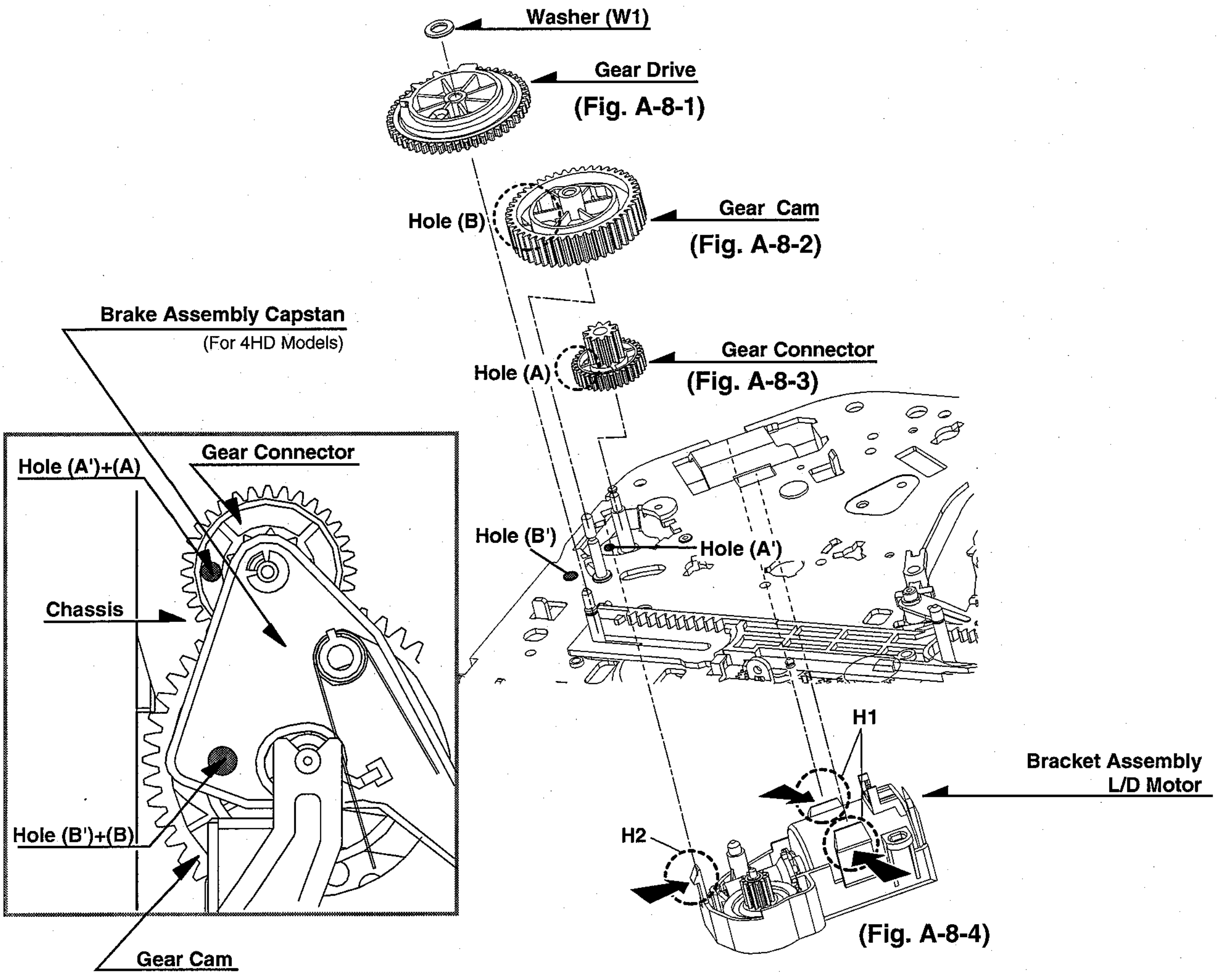

Washer (W1)
Gear Drive
(Fig. A-8-1)
Hole (B)
Gear Cam
(Fig. A-8-2)
Brake Assembly Capstan
(For 4HD Models)
Hole (A)
Gear Connector
(Fig. A-8-3)
Hole (A')+(A)
Gear Connector
Chassis
Hole (B')
Hole (A')
H1
Bracket Assembly
L/D Motor
Hole (B')+(B)
H2
(Fig. A-8-4)
Gear Cam

Fig. A-8

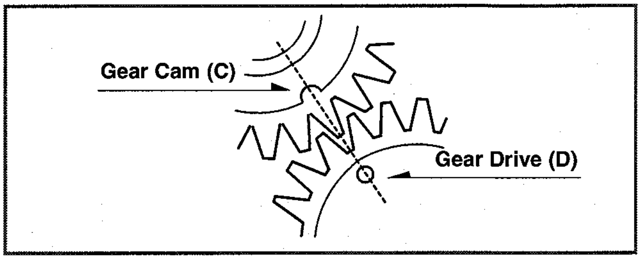
27. Gear Drive (Fig. A-8-1)/ Gear Cam (Fig. A-8-2)/ Gear Connector (Fig. A-8-3)

1) Remove the Washer(W1) and lift up the Gear Drive.
2) Lift up the Gear Cam.
3) Lift up the Gear Connector.

NOTE

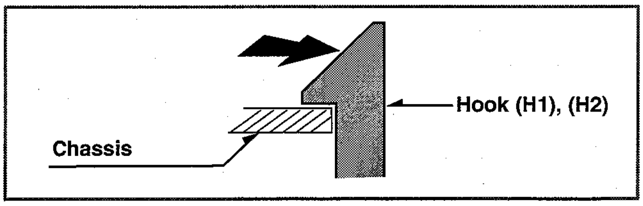
(1) When reassembling, confirm that the Hole (A) of the Gear Connector is aligned to the Hole (A') of the Chassis (Fig. A-8-3).
(2) When reassembling, confirm that the Hole (B) of the Gear Cam is aligned to the Hole (B') of the Chassis (Fig. A-8-2).
(3) When reassembling, confirm that the (C) part of the Gear Cam is aligned to the (D) part of the Gear Drive as shown Fig. B-3

(Fig. B-3)


Gear Cam (C)
Gear Drive (D)

28. Bracket Assembly L/D Motor (Fig. A-8-4)

1) Unhook the three Hooks(H1),(H2) and push down the Bracket Assembly L/D Motor.


Hook (H1), (H2)
Chassis

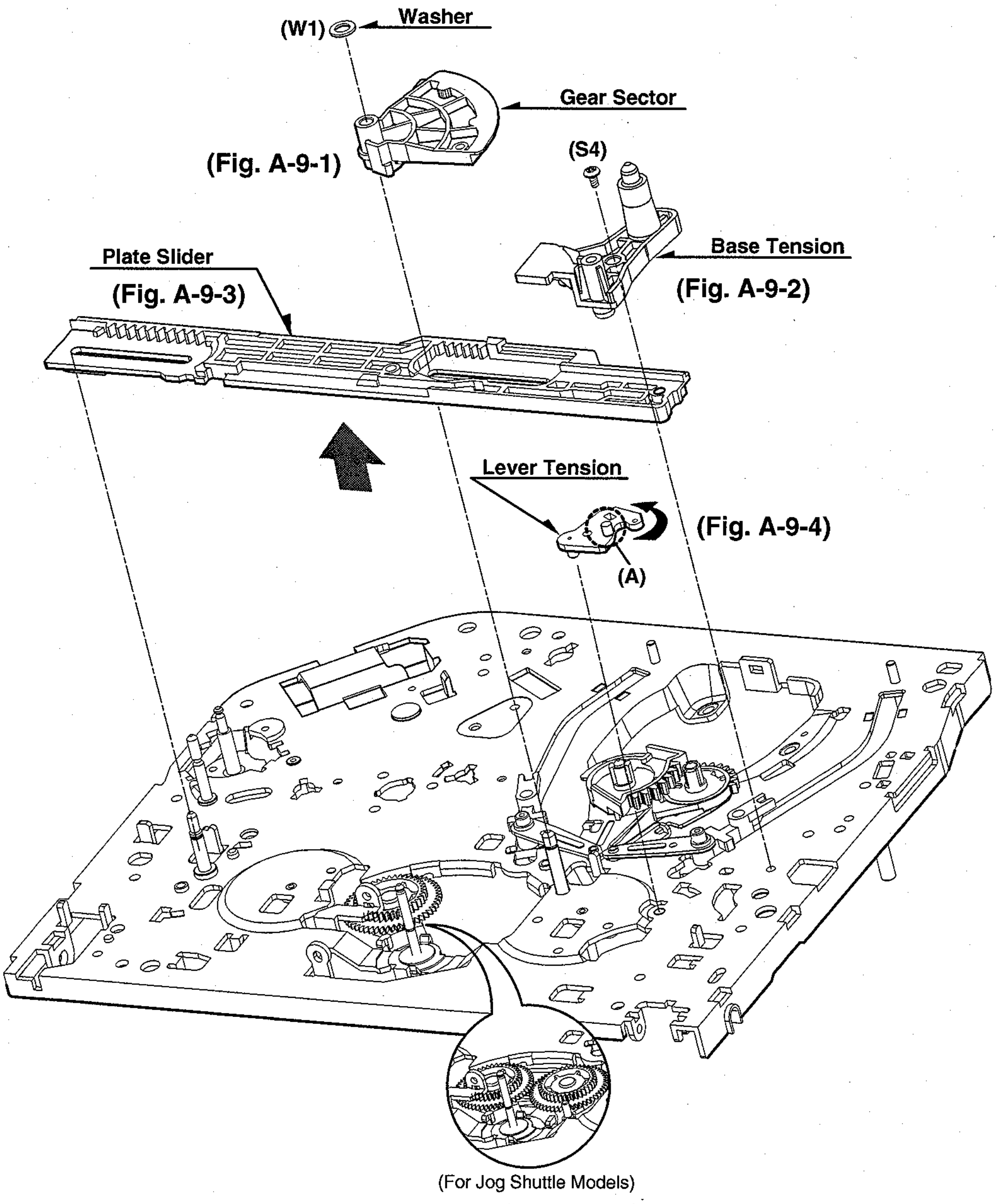

(W1)
Washer
Gear Sector
(Fig. A-9-1)
(S4)
Base Tension
(Fig. A-9-2)
Plate Slider
(Fig. A-9-3)
Lever Tension
(Fig. A-9-4)
(A)
(For Jog Shuttle Models)

Fig. A-9

29. Gear Sector (Fig. A-9-1)

1) Remove the Washer(W1) and lift up the Gear Sector.

30. Base Tension (Fig. A-9-2)/ Plate Slider (Fig. A-9-3)/ Lever Tension (Fig. A-9-4)

1) Remove the Screw(S4) and lift up the Base Tension.
2) Lift up the Plate Slider.
3) Hold the (A) Part of the Lever Tension and turn to the counterclockwise direction, and then lift up the Lever Tension.

NOTE

(1) When reassembling, turn the Lever Tension to the clockwise direction in maximum.
(2) Push the plate slide right side to be guided by the shaft.

DECK MECHANISM DISASSEMBLY

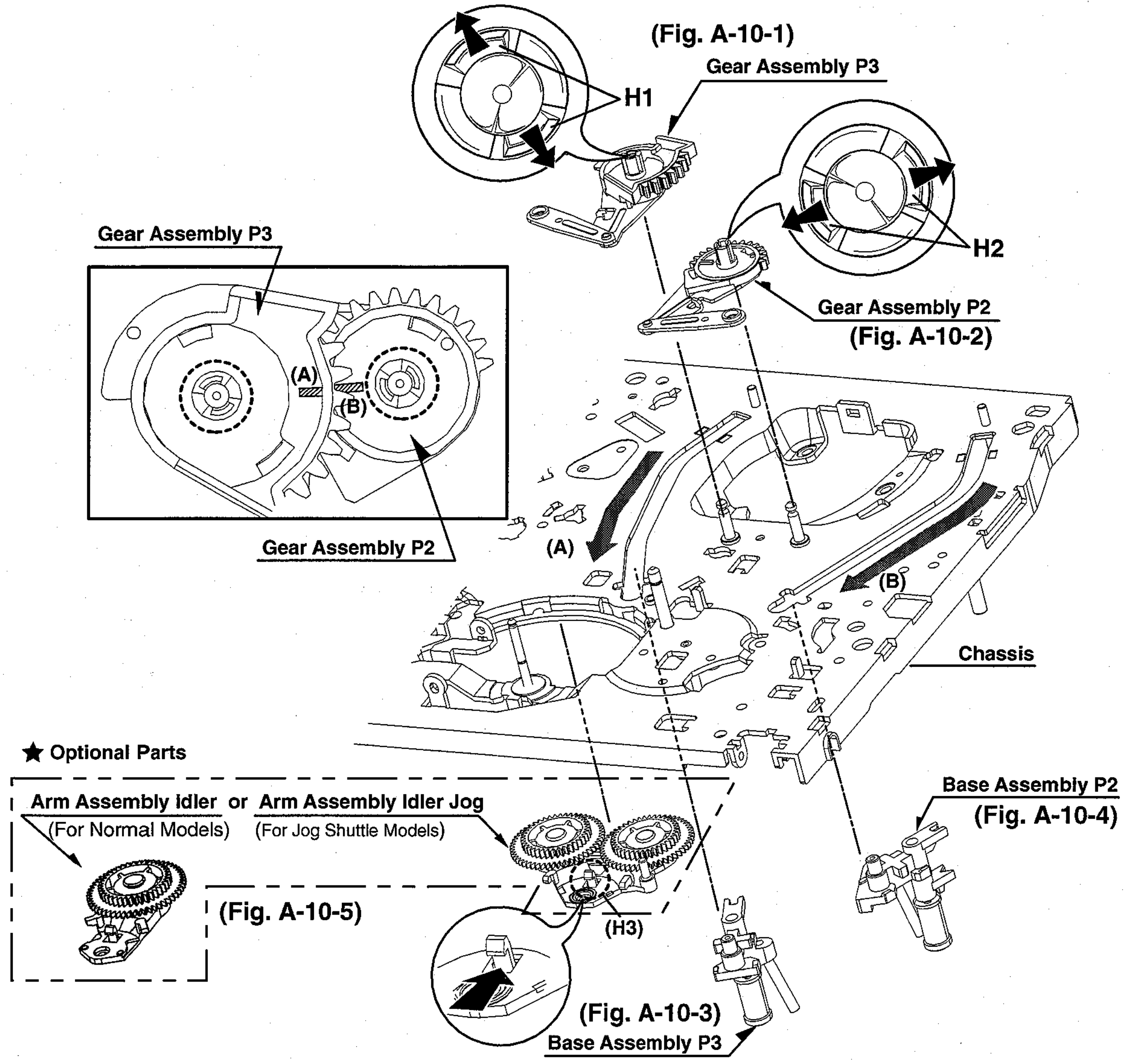

(Fig. A-10-1)
Gear Assembly P3
H1
H2
Gear Assembly P2
(Fig. A-10-2)
Gear Assembly P3
(A)
(B)
Gear Assembly P2
(A)
(B)
Chassis
★ Optional Parts
Arm Assembly Idler or Arm Assembly Idler Jog
(For Normal Models)
(For Jog Shuttle Models)
(Fig. A-10-5)
(H3)
Base Assembly P2
(Fig. A-10-4)
(Fig. A-10-3)
Base Assembly P3

Fig. A-10

31. Gear Assembly P3 (Fig. A-10-1)/ Gear Assembly P2 (Fig. A-10-2)

1) Unhook the two Hooks(H1) and lift up the Gear Assembly P3.
2) Unhook the two Hooks(H2) and lift up the Gear Assembly P2.

32. Base Assembly P3 (Fig. A-10-3)/ Base Assembly P2 (Fig. A-10-4)

1) Move the Base Assembly P3 in the direction of the arrow of the Chassis Hole(A) and push down the Base Assembly P3.
2) Move the Base Assembly P2 in the direction of the arrow of the Chassis Hole(B) and push down the Base Assembly P2.

33. Arm Assembly Idler or Arm Assembly Idler Jog(Fig. A-10-5)

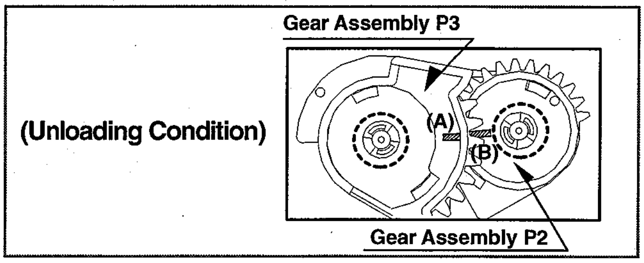
1) Unhook the Hook(H3) and push down the Arm Assembly Idler Jog.

NOTE

1) Arm Assembly Idler is for Normal Models.
2) Arm Assembly Idler Jog is for Jog Shuttle Models.

NOTE

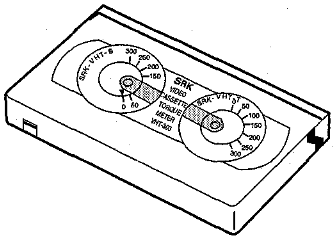
1) When reassembling, confirm that the (A) Part of the Gear Assembly P3 is aligned to the (B) Part of the Gear Assembly P2 as shown below.


Gear Assembly P3
(Unloading Condition)
(A)
(B)
Gear Assembly P2

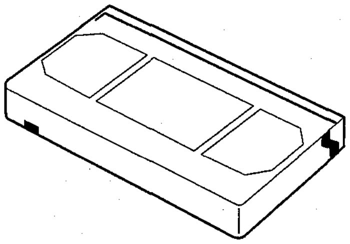
DECK MECHANISM ADJUSTMENT

• Tools and Fixtures for Service

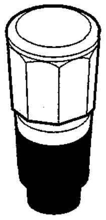
1. Cassette Torque meter
SRK-VHT-303(Not SVC part)



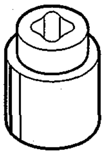
2. Alignment tape
(See figure below)



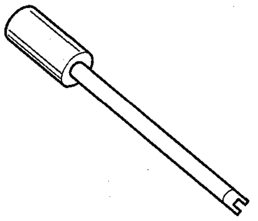
3. Torque gauge
600g.Cm ATG



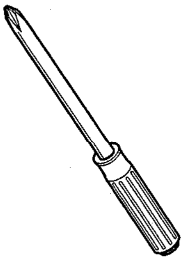
4. Torque gauge adaptor



5. Post height adjusting driver
Parts No:
SV-TGO-030-000 (SMALL)
SV-TGO-020-000 (LARGE)



6. + Type driver (ø 5)



ALIGNMENT TAPES FOR ADJUSTMENT

Derivation No.		A	B	C	D
Mechanism Adjustment Items		PAL	PAL	NTSC	NTSC
		SP/LP 2/4 Head	SP 2 Head	SP/LP/EP 2/4 Head	SP 2 Head
FM Envelope		TTV-P2L	TTV-P2	TTV-N1 (TTN-N12)	TTV-N2
A/C Head	Slantness	A commercially available tape			
	Height	TTV-P1 (TTV-P1L)	TTV-P1	TTV-N1 (TTV-N12) (TTV-N1E)	TTV-N1 (TTV-N12)
	Azimuth	TTV-P2	TTV-P2	TTV-N2	TTV-N2
X-value		TTV-P2	TTV-P2	TTV-N2 TTV-N2E	TTV-N2
RG Post Inclination		A commercially available tape			
Tape Back Tension		SRK-VHT-303			

The numbers in ( ) parenthesis can be used as the substiture.

DECK MECHANISM ADJUSTMENT

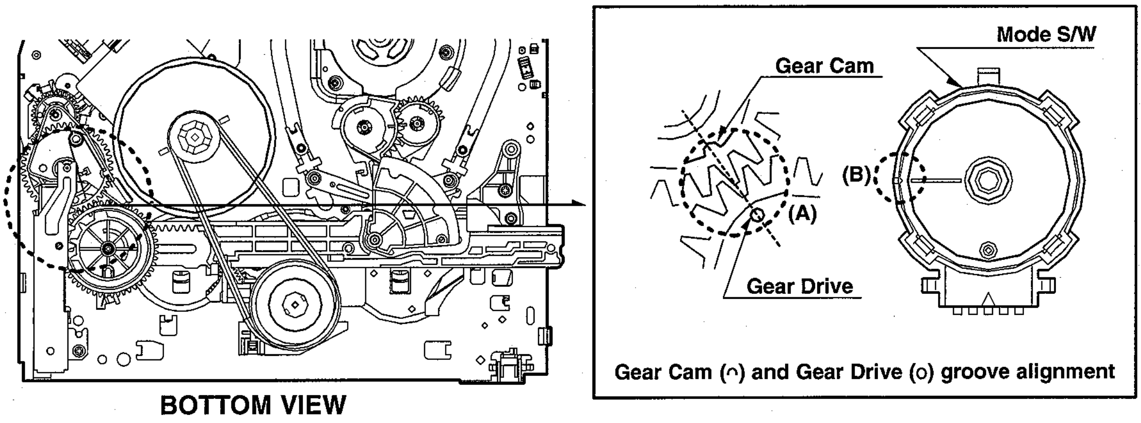
1.Mechanism Alignment Position Check

Purpose:To determine if the Mechanism is in the correct position, when a Tape is ejected.

Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Check Point
• Blank tape	• Eject Mode (with Cassette ejected)	• Mechanism and Mode Switch Position

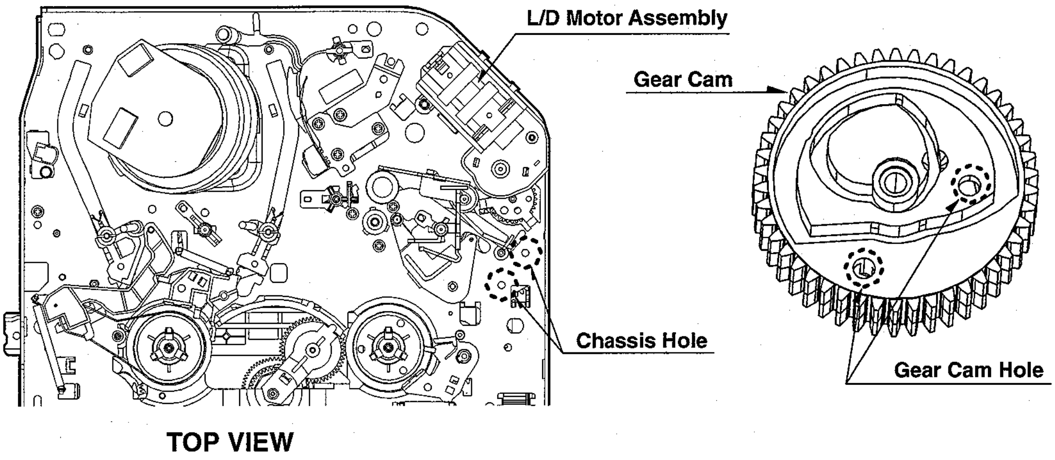
1) Turn the Power S/W on and eject the Cassette by pressing the Eject Button.
2) Remove the Top Cover and Plate Assembly Top, visually check if the Gear Cam Hole is aligned with the Chassis Hole as below Fig. C-2.
3) IF not, rotate the Shaft of the Loading Motor to either Clockwise or Counterclockwise until the Alignment is as below Fig. C-2.
4) Remove the Screw which fixes the Deck Mechanism and Main Frame and confirm if the Gear Cam is aligned with the Gear Drive as below Fig. C-1(A).
5) Confirm if the Mode S/W on the Main P.C.Board is aligned as below Fig. C-1(B).
6) Remount the Deck Mechanism on the Main P.C.Board and check each operation.

CHECK DIAGRAM



BOTTOM VIEW
Mode S/W
Gear Cam
(B)
(A)
Gear Drive
Gear Cam (⌒) and Gear Drive (o) groove alignment

Fig. C-1



L/D Motor Assembly
Gear Cam
Chassis Hole
Gear Cam Hole
TOP VIEW

Fig. C-2

DECK MECHANISM ADJUSTMENT

2. Preparation for Adjustment (To set the Deck Mechanism to the Loading state without inserting a Cassette Tape).

1) Unplug the Power Cord from the AC Outlet.
2) Disassemble the Top Cover and Plate Assembly Top.
3) Plug the Power Cord into the AC Outlet.
4) Turn the Power S/W on and push the Lever Stopper (L),(R) of the Holder Assembly CST to the back for Loading the Cassette without Tape.
   Cover the Holes of the End Sensors at the both sides of the Bracket Side(L) and Bracket Assembly Door to prevent a light leak.
   Then The Deck Mechanism drives to the Stop Mode.
   In this case, The Deck Mechanism can accept inputs of each mode, however the Rewind and Review Operation can not be performed for more than a few seconds because the Take-up Reel Table is in the Stop State and can not be detected the Reel Pulses.

3. Checking Torque

Purpose: To insure smooth Transport of the Tape during each Mode of Operation.
If the Tape Transport is abnormal, then check the Torque as indicated by the chart below.

Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Checking Method
• Torque Gauge(600g/cm ATG) • Torque Gauge Adaptor • Cassette Torque Meter SRK-VHT-303	• Play (FF) or Review (REW) Mode	• Perform each Deck Mechanism Mode without inserting a Cassette Tape(Refer to above No.2 Preparation for Adjustment). • Read the Measurement of the Take-up or Supply Reels on the Cassette Torque Meter(Fig. C-3-2). • Attach the Torque Gauge Adaptor to the Torque Gauge and then read the Value of it(Fig. C-3-1).

Item	Mode	Test Equipment	Measurement Reel	Measurement Values
Fast Forward Torque	Fast Forward	Cassette Torque Gauge	Take-Up Reel	More than 400g/cm
Rewind Torque	Rewind	Cassette Torque Gauge	Supply Reel	More than 400g/cm
Play Take-Up Torque	Play	Cassette Torque Meter	Take-Up Reel	75~115g/cm
Review Torque	Review	Cassette Torque Meter	Supply Reel	130~200g/m

NOTE:

The Values are measured by using a Torque Gauge and Torque Gauge Adaptor with the Torque Gauge affixed.

- **Cassette Torque Meter (SRK-VHT-303)**

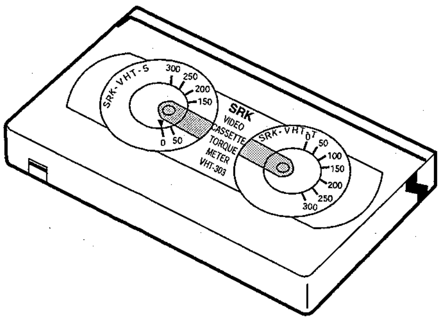


Fig. C-3-2

NOTE:

The Torque reading to measure occurs when the Tape abruptly changes direction from Fast Forward of Rewind Mode, when quick bracking is applied to both Reels.

- **Torque Gauge (600g.cm ATG)**

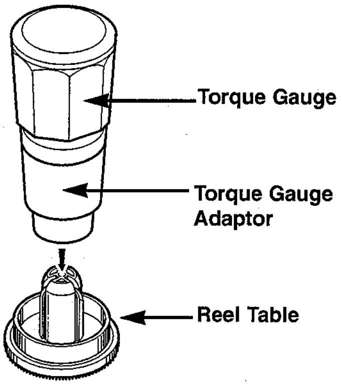


Fig. C-3-1

DECK MECHANISM ADJUSTMENT

4.Guide Roller Height Adjustment

Purpose: To regulate the Height of the Tape so that the Bottom of the Tape runs along the Tape Guide Line on the Lower Drum.

4-1. Preliminary Adjustment

Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Adjustment Point
• Post Height Adjusting Driver	• Play or Review Mode	• Guide Roller Height Adjustment screws on the Supply and Take-Up Guide Rollers.

Adjustment Procedure

1) Confirm if the Tape runs along the Tape Guide Line of the Lower Drum.
2) If the Tape runs the Bottom of the Guide Line, turn the Guide Roller Height Adjustment Screw to Clockwise direction.
3) If it runs the Top, turn to Counterclockwise direction.
4) Adjust the Height of the Guide Roller to be guided to the Guide Line of the Lower Drum from the Starting and Ending Point of the Drum.

ADJUSTMENT DIAGRAM

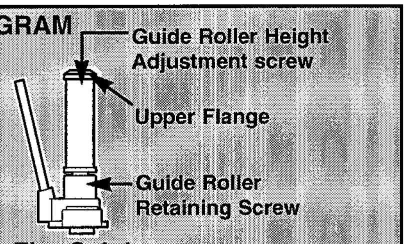

Guide Roller Height Adjustment screw
Upper Flange
Guide Roller Retaining Screw

Fig. C-4-1

4-2. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	Test Conditions VCR(VCP) State	Adjustment Point
• Oscilloscope • Alignment Tape • Post Height Adjusting Driver	• CH-1:PB RF Envelope • CH-2:NTSC: SW 30Hz PAL: SW 25Hz • Head Switching Output Point • RF Envelope Output Point	• Play an Alignment Tape	• Guide Roller Height Adjustment Screws

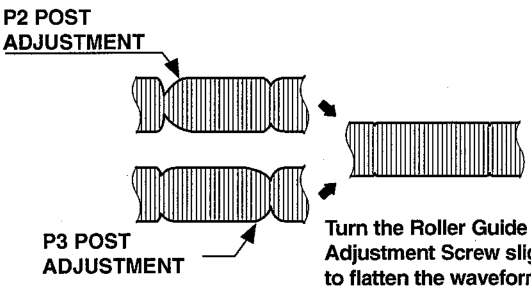
Adjustment Procedure

1) Play an Alignment Tape after connecting the Probe of the Oscilloscope to the RF Envelope Output Test Point and Head Switching Output Test Point.
2) Tracking Control(in PB Mode) : Center Position(When this Adjustment is performed after the Drum Assembly has been replaced, set the Tracking Control so that the RF Output is Maximum).
3) Height Adjustment Screw : Flatten the RF Waveform. (Fig. C-4-2)
4) Turn(Move) the Tracking Control(in PB Mode) Clockwise and Counterclockwise.(Fig. C-4-3)
5) Check that any Drop of RF Output is uniform at the Start and End of the Waveform.

NOTE

If the adjustment is excessive or insufficient the tape will jam or fold.

Waveform Diagrams


P2 POST ADJUSTMENT
P3 POST ADJUSTMENT

Turn the Roller Guide Height Adjustment Screw slightly to flatten the waveform.

Fig. C-4-2

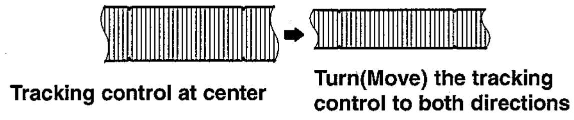
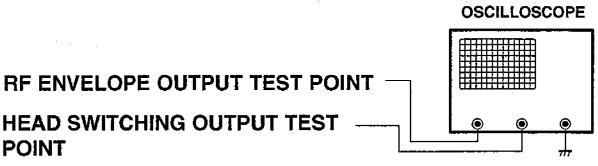

Tracking control at center
Turn(Move) the tracking control to both directions

Fig. C-4-3

Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT

DECK MECHANISM ADJUSTMENT

5. Audio/Control (A/C) Head Adjustment

Purpose: To insure that the Tape passes accurately over the Audio and Control Tracks in exact Alignment in both the Record and Playback Modes.

5-1. Preliminary Adjustment (Height and Tilt Adjustment)

Perform the Preliminary Adjustment, when there is no Audio Output Signal with the Alignment Tape.

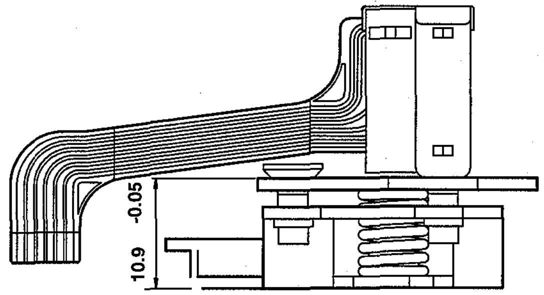
Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Adjustment Point
• Blank Tape • Screw Driver(+) Type 5mm	• Play the blank tape	• Tilt Adjustment Screw(C) • Height Adjustment Screw(B) • Azimuth Adjustment Screw(A)

Adjustment Procedure/Diagrams

1) Initially adjust the Base Assembly A/C Head as shown Fig. C-5-1 by using the Height Adjustment Screw(B).
2) Play a Blank Tape and observe if the Tape passes accurately over the A/C Head without Tape Curling or Folding.
3) If Folding or Curling is occured then adjust the Tilt Adjustment Screw(C) while the Tape is running to resemble Fig. C-5-3.
4) Reconfirm the Tape Path after Playback about 4~5 seconds.

NOTE

Ideal A/C head height occurs, when the tape runs between 0.2~0.25mm above the bottom edge of the A/C head core.



A/C Head Base

Fig. C-5-1

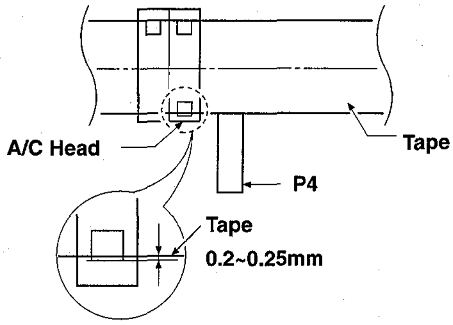
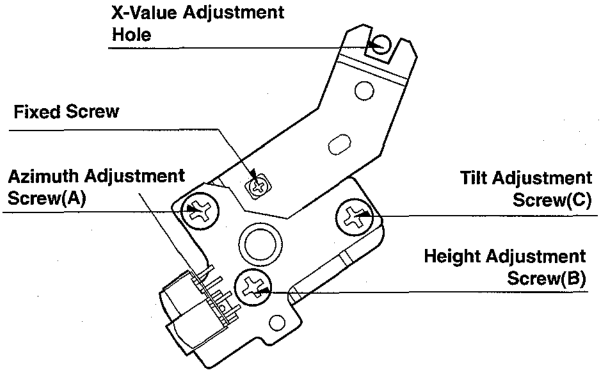

A/C Head
Tape
P4
Tape
0.2~0.25mm

Fig. C-5-3


X-Value Adjustment Hole
Fixed Screw
Azimuth Adjustment Screw(A)
Tilt Adjustment Screw(C)
Height Adjustment Screw(B)

A/C Head Assembly

Fig. C-5-2

5-2. Confirm that the Tape passes smoothly between the Take-up Guide and Pinch Roller(using a Mirror or the naked eye).

1) Afetr completing Step 5-1.(Preliminary Adjustment), check that the Tape passes around the Take-up Guide and Pinch Roller without Folding or Curling at the Top or Bottom.
   (1) If Folding or Curling is observed at the Bottom of the Take-up Guide then slowly turn the Tilt Adjustment Screw(C) in the Clockwise directioin.
   (2) If Folding or Curling is observed at the Top of it then slowly turn the Tilt Adjustment Screw(C) in the Counterclockwise direction.

NOTE:

Check the RF Envelope after adjusting the A/C Head, if the RF Waveform differs from Fig. C-5-4, performs Precise Adjustment to flat the RF Waveform.

5-3. Precise Adjustment (Azimuth adjustment)

Test Equipment/ Fixture	Connection Point	Test Conditions (Mechanism Condition)	Adjustment Point
• Oscilloscope • Alignment Tape(SP) • Screw Driver(+) Type 5mm	• Audio output jack	• Play an Alignment Tape 1KHz, 7KHz Sections	• Azimuth Adjustment Screw(A) • Height Adjustment Screw(B)

Adjustment Procedure

1) Connect the Probe of the Oscilloscope to Audio Output Jack.
2) Alternately adjust the Azimuth Adjustment Screw(A) and the Tilt Adjustment Screw(C) for Maximum Output of the 1Khz and 7Khz segments, while maintaining the flattest Envelope differential between the two Frequencies.

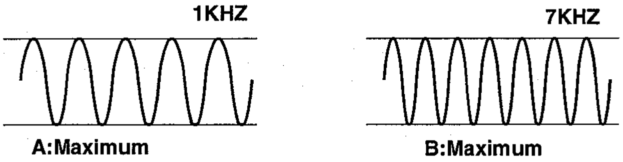
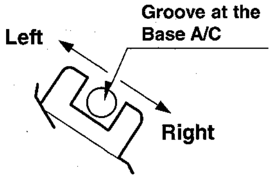


Fig. C-5-4

6. X-Value Adjustment

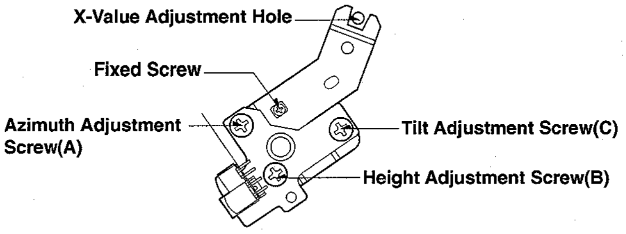
Purpose: To obtain compatibility with other VCR(VCP) Models.

Test Equipment/ Fixture	Connection Point	Test Conditions (Mechanism Condition)	Adjustment Point
• Oscilloscope • Alignment tape(SP only) • Screw Driver(+) Type 5mm	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL: SW 25Hz • Head Swithching Output Test Point • RF Envelope Output Test Point	• Play an Alignment Tape	

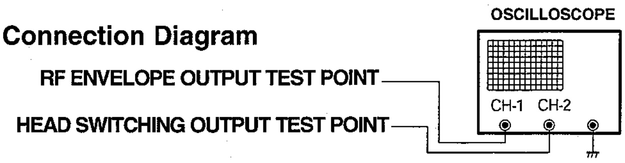
Adjustment Procedure

1) Insert the alignment tape, and press the + or - manual tracking (channel) button once while "AUTO TRACKING" is flashing on the screen to release auto tracking, and then center the tracking.
2) Run the tape long enough for tracking to complete one cycle.
3) Loosen the fixing screw, and move the A/C head base assembly in the direction shown in the diagram, to find the center of the peak so that the maximum envelope is available.
   With this method, the 31-μm head can trace on the centerof 58-μm track.
4) Tighten the A/C head base assembly fixing screw.

Adjustment Diagram



Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT
CH-1
CH-2

DECK MECHANISM ADJUSTMENT

7. Adjustment after Replacing Drum Assembly (Video Heads)

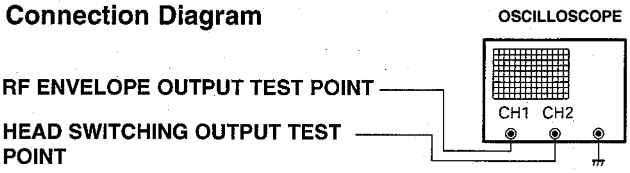
Purpose: To correct for shift in the Roller Guide and X value after replacing the Drum.

Test Equipment/ Fixture	Connection Point	Test Conditions (Mechanism Condition)	Adjustment Points
• Oscilloscope • Alignment tapes • Blank Tape • Post Height Adjusting Driver • Screw Driver(+) Type 5mm	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL: SW 25Hz • Head Swithching Output Test Point • RF Envelope Output Test Point	• Play the blank tape • Play an alignment tape	• Guide Roller Precise Adjustment • Switching Point • Tracking Preset • X-Value

Checking/Adjustment Procedure

Play a blank tape and check for tape curling or creasing around the roller guide. If there is a problem then follow the procedure 4. "Guide Roller Height" and 5. "Audio Control(A/C) Head Adjustment".

Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT
CH1 CH2

Waveform

V1/V MAX ≦ 0.7
V2/V MAX ≦ 0.8
RF ENVELOPE OUTPUT

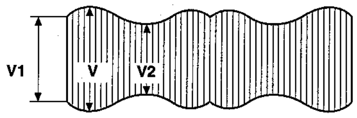


Fig. C-7

8. Check the Tape Travel after Reassembling Deck Assembly.

8-1.Check Audio and RF Locking Time during playback and after CUE or REV (FF/REW)

Test Equipment/ Fixture	Specification	Connection Points	Test Conditions (Mecanism Condition)
• Oscilloscope • Alignment tapes(with 6H 3kHz Color Bar Signal) • Stop Watch	• RF Locking Time: Less than 5 sec. • Audio Locking Time:Less than 10sec	• CH-1: PB RF Envelope • CH-2: Audio Output • RF Envelope Output Point • Audio Ouptut Jack	• Play an alignment tape (with 6H 3kHz Color Bar Signal)

Checking Procedure

Play an alignment tape then change the operating mode to CUE or REV and confirm if the unit meets the above listed specifications.

NOTES:

1) CUE is fast forward mode (FF)
2) REV is the rewind mode (REW)

8-2.Check for tape curling or jamming

Test Equipment/ Fixture	Specification	Test Conditions (Mecanism Condition)
• T-160 Tape • T-120 Tape	• Be sure there is no tape jamming or curling at the begining, middle or end of the tape.	• Run the CUE, REV play mode at the beginning and the end of the tape.

Checking Procedure

1) Confirm that the tape runs smoothly around the roller guides, drum and A/C head assemblies while abruptly changing operating modes from Play to CUE or REV. This is to be checked at the begining, middle and end sections of the cassette.
2) Confirm that the tape passes over the A/C head assembly as indicated by proper audio reproduction and proper tape counter performance.

MAINTENANCE/INSPECTION PROCEDURE

1 Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.
Check with the customer to find out how often the unit is used, and then determine that the unit is ready for inspection and maintenance. Check the following parts.

Phenomenon	Inspection	Replacement
Color beats	Dirt on full-erase head	o
Poor S/N, no color	Dirt on video head	o
Vertical or Horizontal jitter	Dirt on video head Dirt on tape transport system	o
Low volume, Sound distorted	Dirt on Audio/control head	o
Tape does not run. Tape is slack	Dirt on pinch roller	o
In Review and Unloading (off mode), the Tape is rolled up loosely.	Clutch Assembly D33K Torque reduced	o
	Cleaning Drum and transport system	Fig. C-9-3

NOTE

If locations marked with **o** do not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations See the Greasing (Page 87) for the sections to be lubricated and greased.

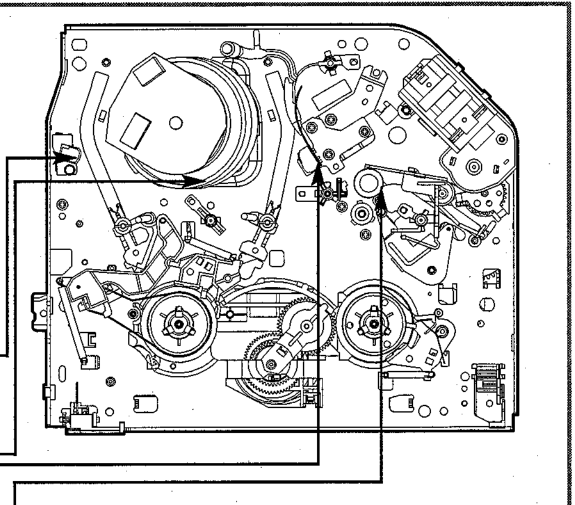

F/E Head
Video Head
A/C Head
Pinch Roller

Fig. C-9-1 Top VIEW

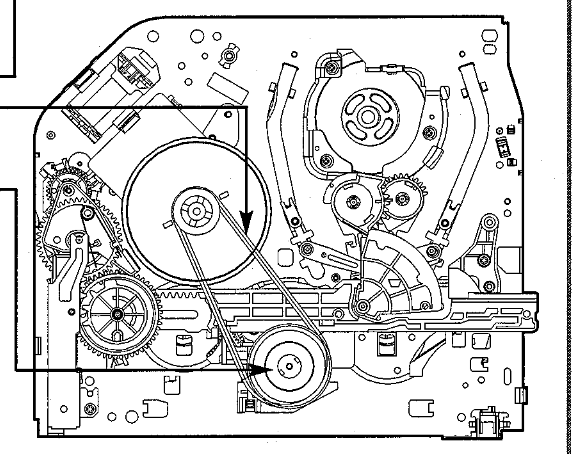

Belt Capston
Clutch Assembly D33K

Fig. C-9-2 BOTTOM VIEW

*** No. (1)~(13) Indicates the Tape Path to be traveled from Supply Reel to Take-up Reel.**

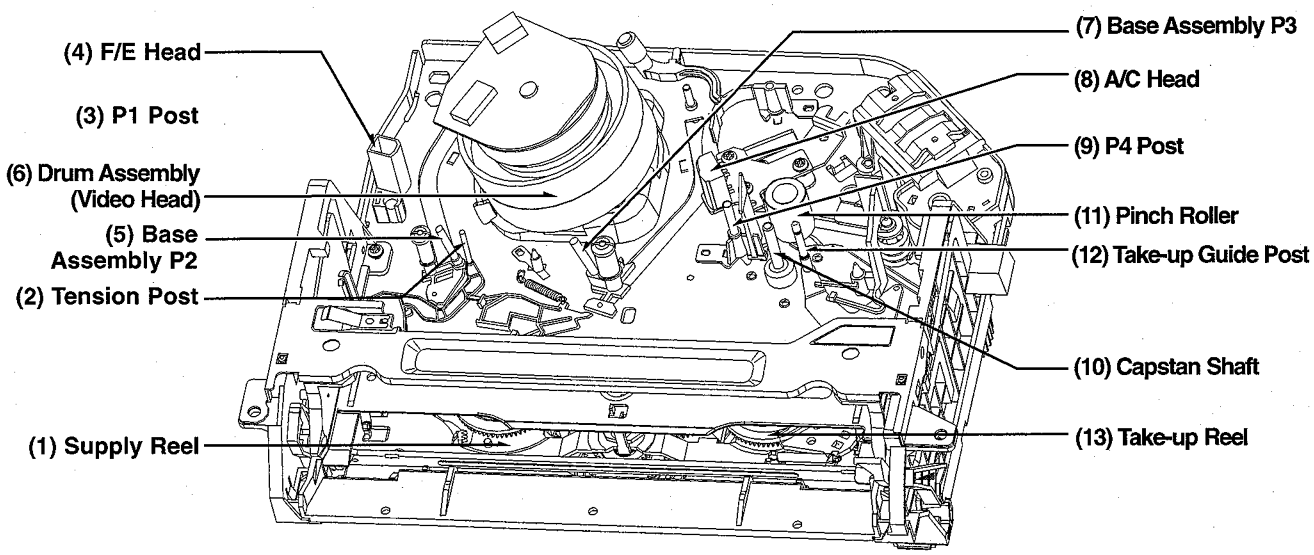

(4) F/E Head
(3) P1 Post
(6) Drum Assembly (Video Head)
(5) Base Assembly P2
(2) Tension Post
(1) Supply Reel
(7) Base Assembly P3
(8) A/C Head
(9) P4 Post
(11) Pinch Roller
(12) Take-up Guide Post
(10) Capstan Shaft
(13) Take-up Reel

Fig. C-9-3 Tape Transport System

MAINTENANCE/INSPECTION PROCEDURE

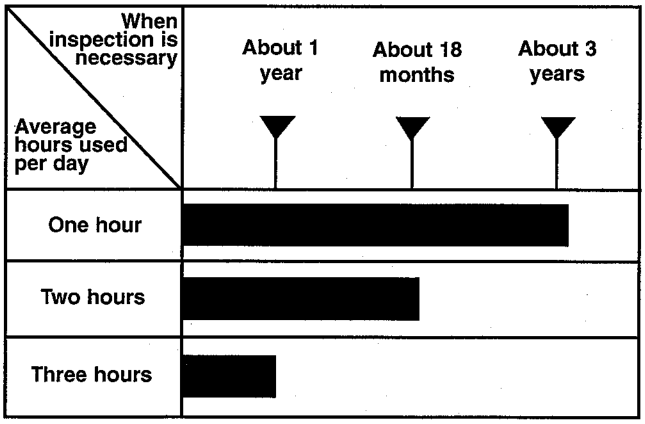
2. Required Maintenance

The recording density of a VCR(VCP) is much higher than that of an audio tape recorder. VCR(VCP) components must be very precise, at tolerances of 1/1000mm, to ensure compatiblity with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure a good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, is necessary.

3. Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR(VCP), and the environment in which the VCR(VCP) is used.
But, in general home use, a good picture will be maintained if inspection and maintenance is made every 1,000 hours. The table below shows the relation between time used and inspection period.

Table 1



4. Supplies Required for Inspection and Maintence

(1) Grease : Kanto G-311G (Blue) or equivalent
(2) Isopropyl Alcohol or equivalent
(3) Cleaning Patches
(4) Grease : Kanto G-381(Yellow) : Used only for Reel S and Reel T

5) Maintenance Procedure

5-1) Cleaning

(1) Cleaning video head
First use a cleaning tape. If the dirt on the head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with Isopropyl Alcohol. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.
(Do not move the cleaning patch vertically. Make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)
Thoroughly dry the head. Then run the test tape. If Isopropyl Alcohol remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with Isporopyl Alcohol.

NOTES:

① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which moves the tape.

② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no that force is that would cause deforming or damage applied to the system.

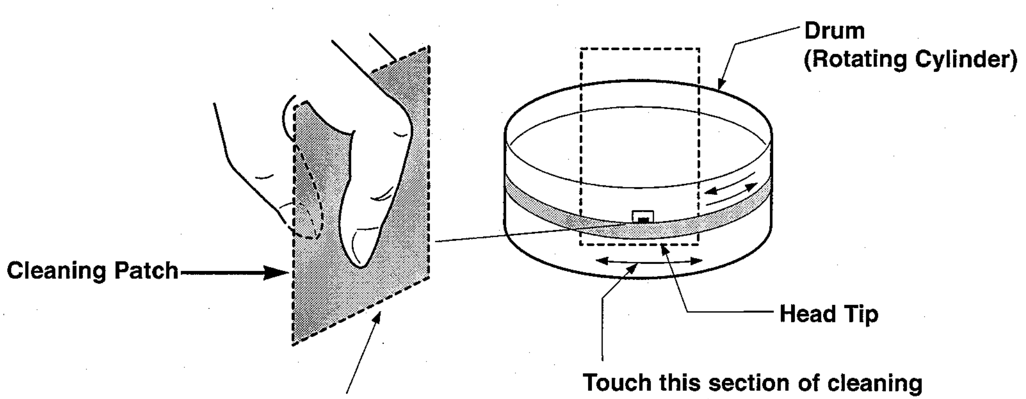

Drum
(Rotating Cylinder)
Cleaning Patch
Head Tip
Coat With Isopropyl Alcohol
Touch this section of cleaning patch to the head tip and gently turn the Drum (Rotating Cylinder)

Fig. C-9-4

MAINTENANCE/INSPECTION PROCEDURE

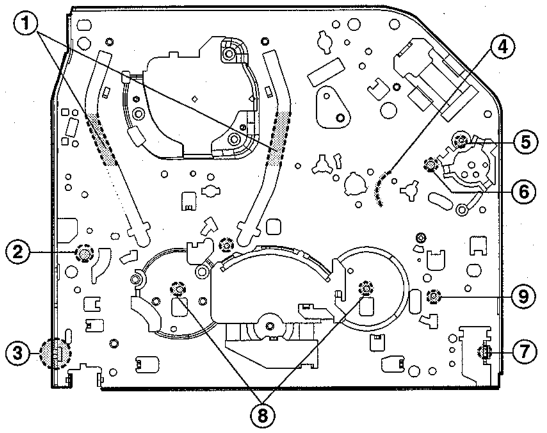
5-2) Greasing

(1) Greasing guidelines

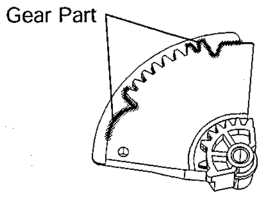
Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with cleaning patch wetted in Isopropyl Alcohol.

NOTE:Greasing Points

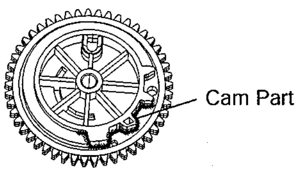
1) Loading Path Inside & Top side
2) Base Tension Boss inside Hole
3) Arm Assembly F/L "U" Groove
4) Arm Take-up Rubbing Section
5) L/D Motor Worm Wheel Part
6) Shaft
7) Arm Assembly F/L of Buming Inside Hole
8) Reel S, T Shaft (G381:Yellow)
9) Brake T Groove



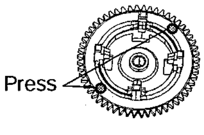
Chassis (Top)



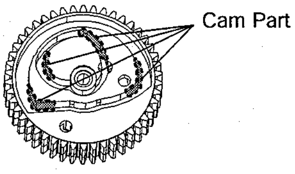
Gear Sector



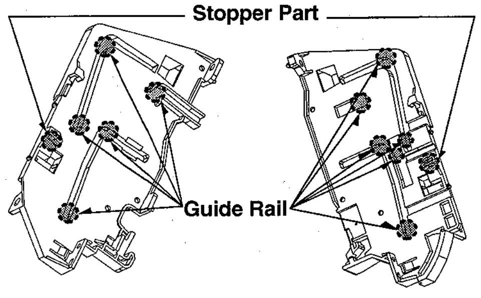
Gear Cam



Gear Assembly Up/D



Gear Drive

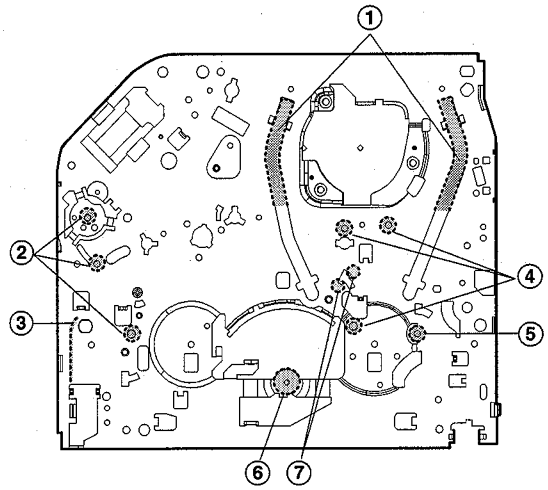

Stopper Part
Guide Rail

Bracket Side (L) **Bracket Assembly Door**

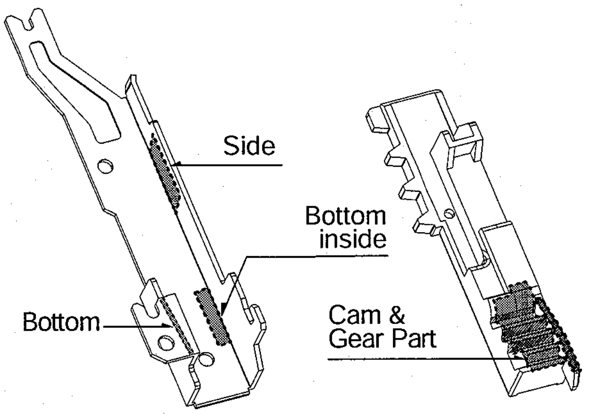
(2) Periodic greasing

Grease specified locations every 5,000 hours.

1) Loading Path Inside & Top side
2) Shaft
3) Gear Rack F/L Moving Section
4) Shaft
5) Lever Tension Groove
6) Clutch Assembly D33 Shaft
7) Brake "S" Rubbing Section



Chassis (Bottom)


Side
Bottom inside
Bottom
Cam & Gear Part

Guide Rack F/L **Gear Rack F/L**

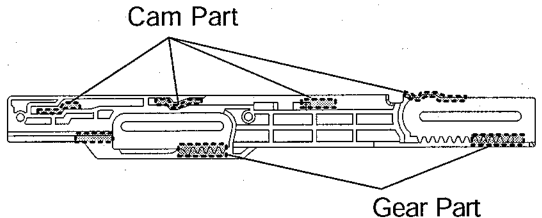

Cam Part
Gear Part

Plate Slider (Top)

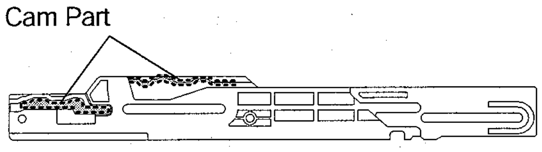
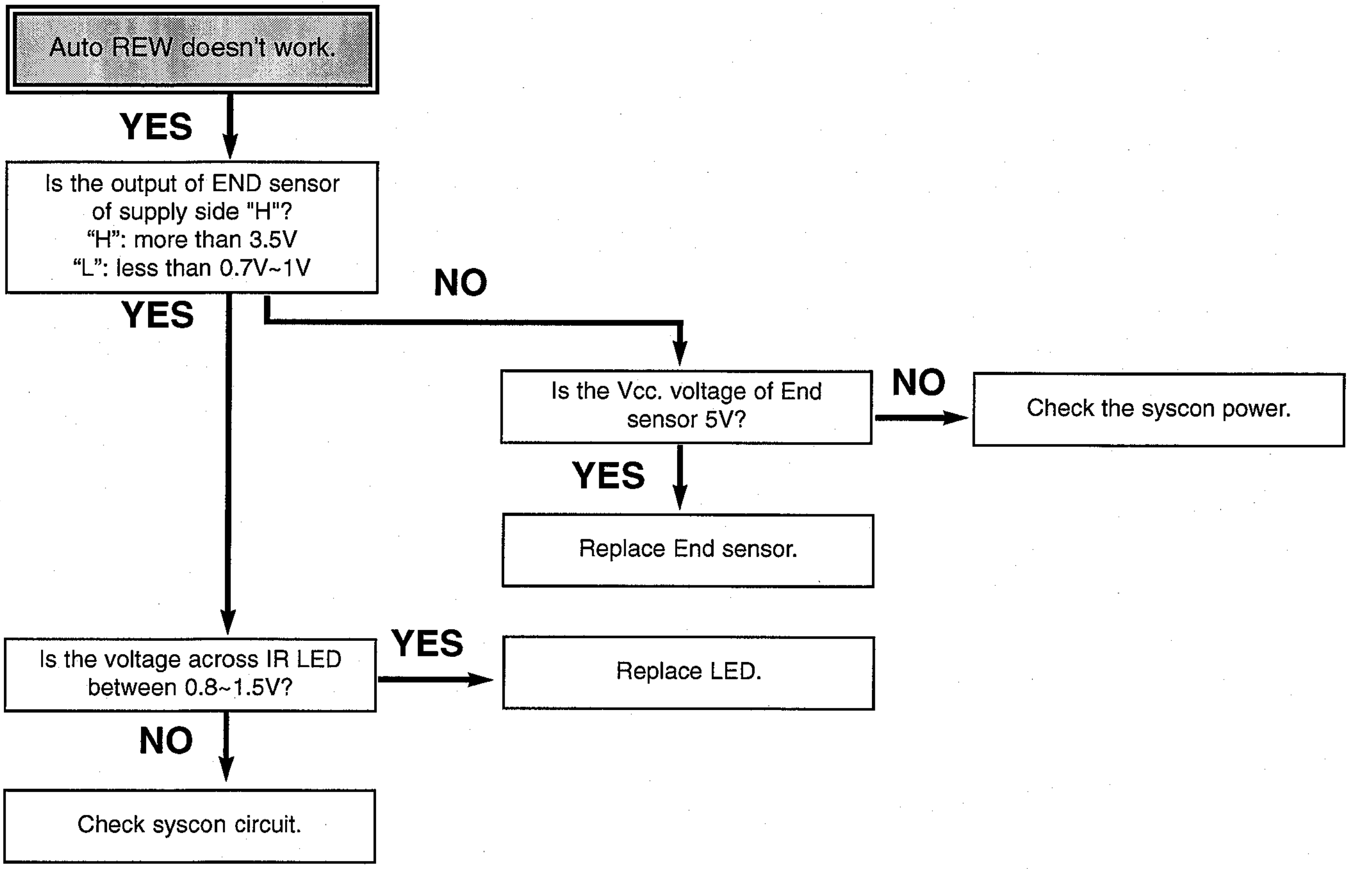


Plate Slider (Bottom)

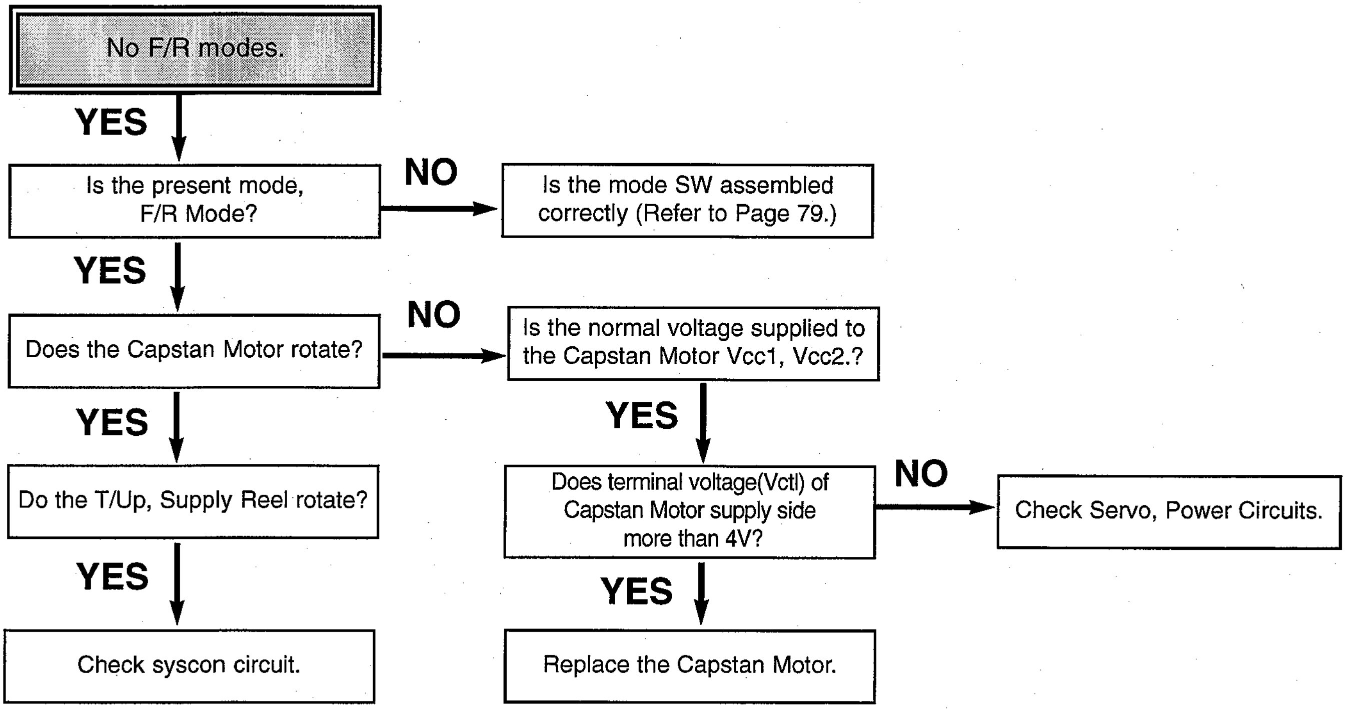
MECHANISM TROUBLESHOOTING GUIDE

1.Deck Mechanism

A.


Auto REW doesn't work.
YES
Is the output of END sensor of supply side "H"?
"H": more than 3.5V
"L": less than 0.7V~1V
YES
NO
Is the Vcc. voltage of End sensor 5V?
NO
Check the syscon power.
YES
Replace End sensor.
Is the voltage across IR LED between 0.8~1.5V?
YES
Replace LED.
NO
Check syscon circuit.

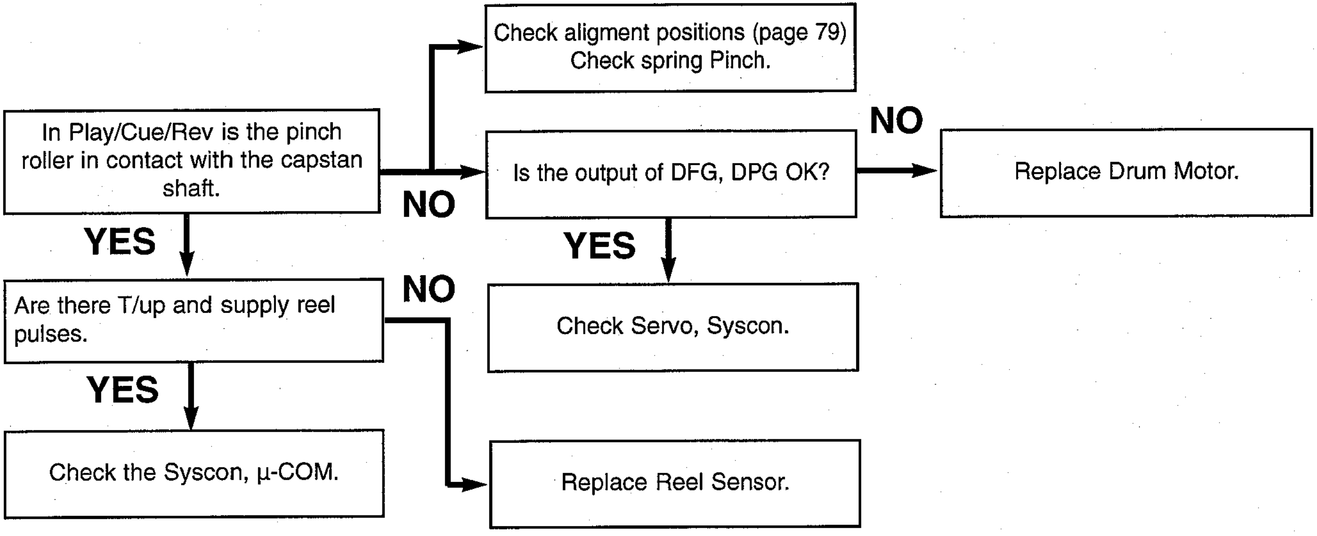
B.


No F/R modes.
YES
Is the present mode, F/R Mode?
NO
Is the mode SW assembled correctly (Refer to Page 79.)
YES
Does the Capstan Motor rotate?
NO
Is the normal voltage supplied to the Capstan Motor Vcc1, Vcc2.?
YES
Do the T/Up, Supply Reel rotate?
YES
Does terminal voltage(Vctl) of Capstan Motor supply side more than 4V?
NO
Check Servo, Power Circuits.
YES
Check syscon circuit.
YES
Replace the Capstan Motor.

MECHANISM TROUBLESHOOTING GUIDE

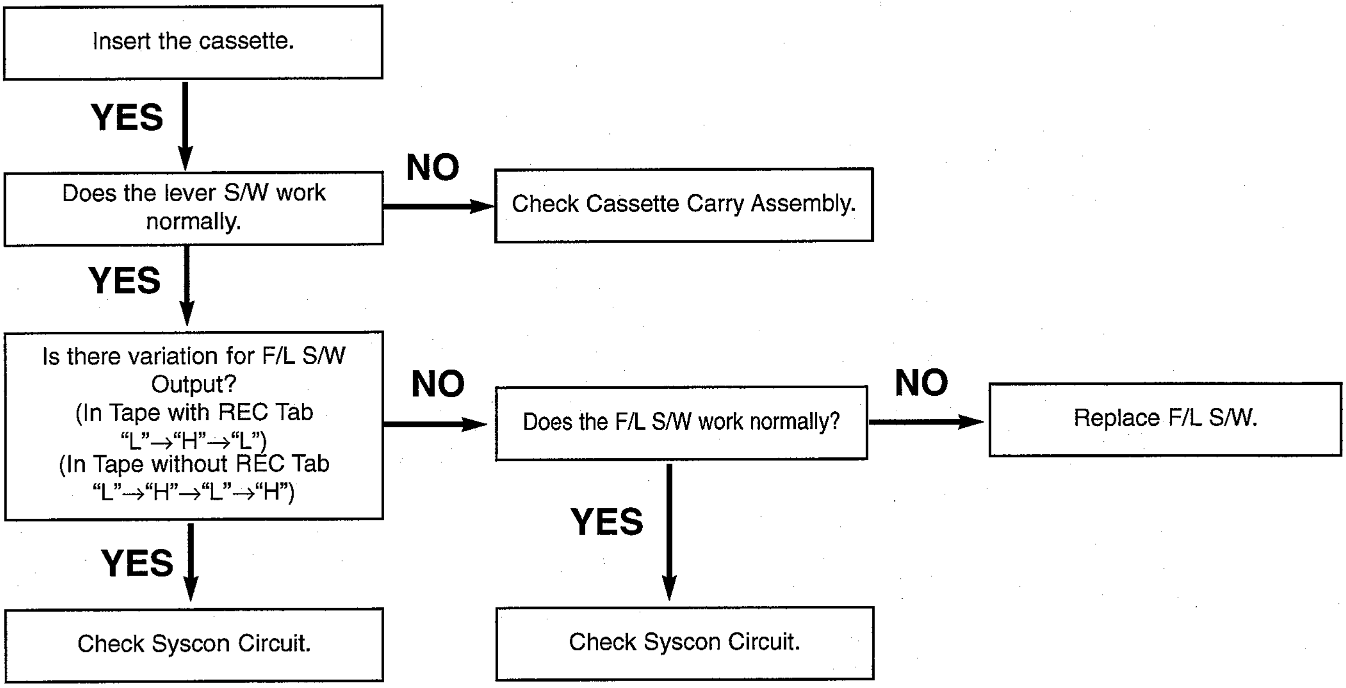
C.

**AUTO STOP.
(PLAY/CUE/REV)**


In Play/Cue/Rev is the pinch roller in contact with the capstan shaft.
NO
Check aligment positions (page 79) Check spring Pinch.
Is the output of DFG, DPG OK?
NO
Replace Drum Motor.
YES
Check Servo, Syscon.
YES
Are there T/up and supply reel pulses.
NO
Replace Reel Sensor.
YES
Check the Syscon, µ-COM.

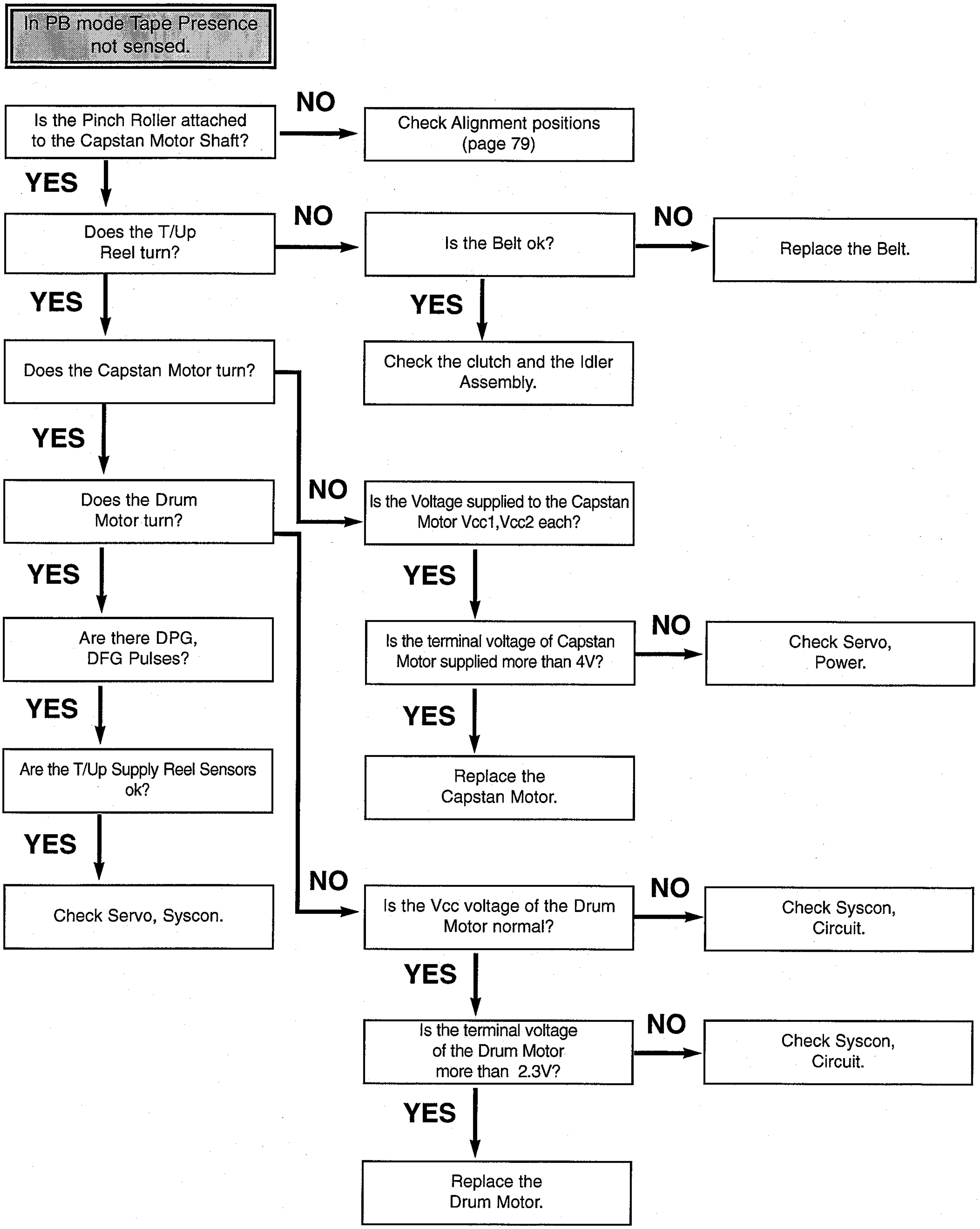
D.

No cassette loading.


Insert the cassette.
YES
Does the lever S/W work normally.
NO
Check Cassette Carry Assembly.
YES
Is there variation for F/L S/W Output? (In Tape with REC Tab "L"→"H"→"L") (In Tape without REC Tab "L"→"H"→"L"→"H")
NO
Does the F/L S/W work normally?
NO
Replace F/L S/W.
YES
Check Syscon Circuit.
YES
Check Syscon Circuit.

MECHANISM TROUBLESHOOTING GUIDE

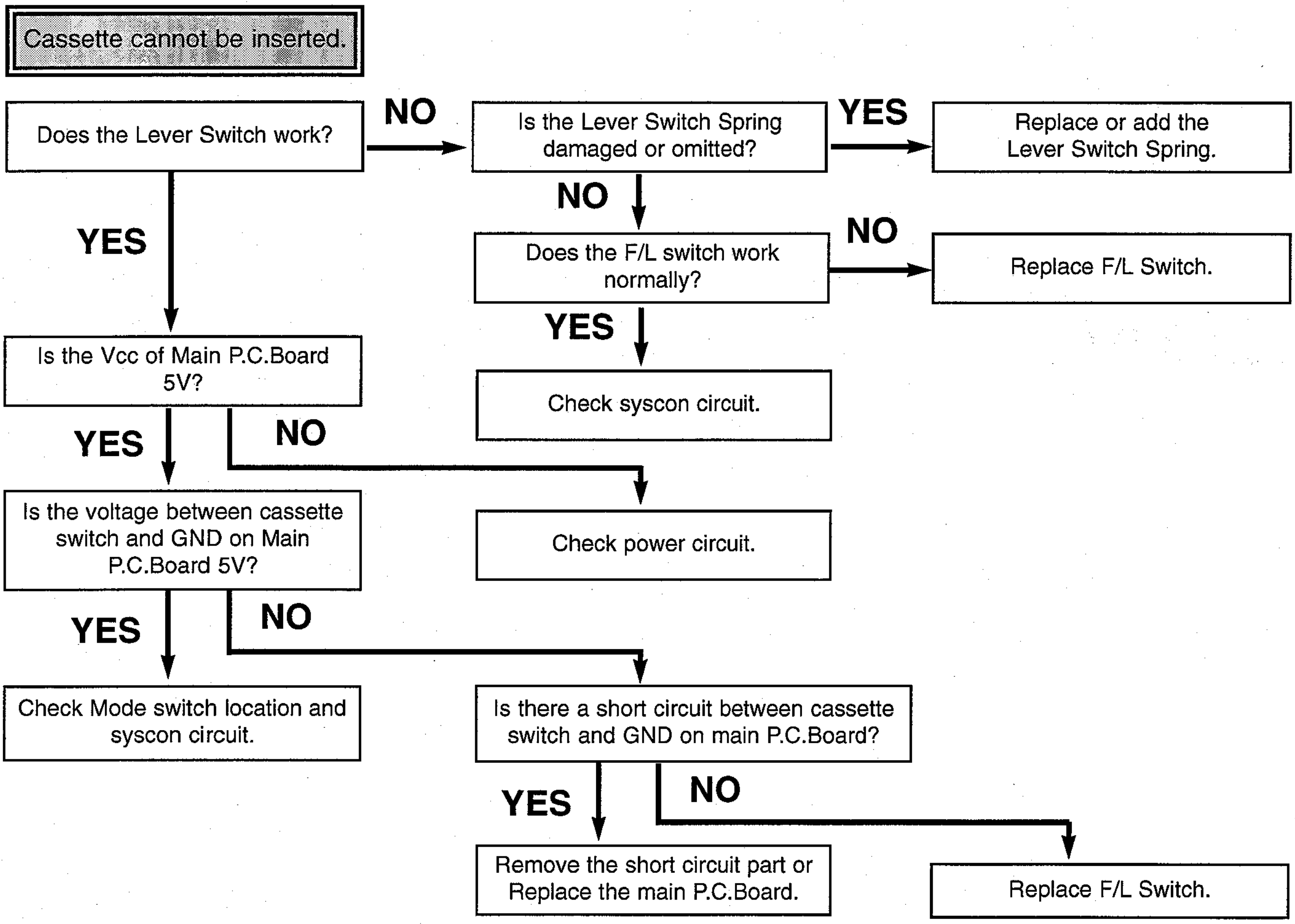
E.


In PB mode Tape Presence not sensed.
Is the Pinch Roller attached to the Capstan Motor Shaft?
NO
Check Alignment positions (page 79)
YES
Does the T/Up Reel turn?
NO
Is the Belt ok?
NO
Replace the Belt.
YES
YES
Check the clutch and the Idler Assembly.
Does the Capstan Motor turn?
YES
Does the Drum Motor turn?
NO
Is the Voltage supplied to the Capstan Motor Vcc1,Vcc2 each?
YES
YES
Are there DPG, DFG Pulses?
Is the terminal voltage of Capstan Motor supplied more than 4V?
NO
Check Servo, Power.
YES
YES
Are the T/Up Supply Reel Sensors ok?
Replace the Capstan Motor.
YES
NO
Check Servo, Syscon.
Is the Vcc voltage of the Drum Motor normal?
NO
Check Syscon, Circuit.
YES
Is the terminal voltage of the Drum Motor more than 2.3V?
NO
Check Syscon, Circuit.
YES
Replace the Drum Motor.

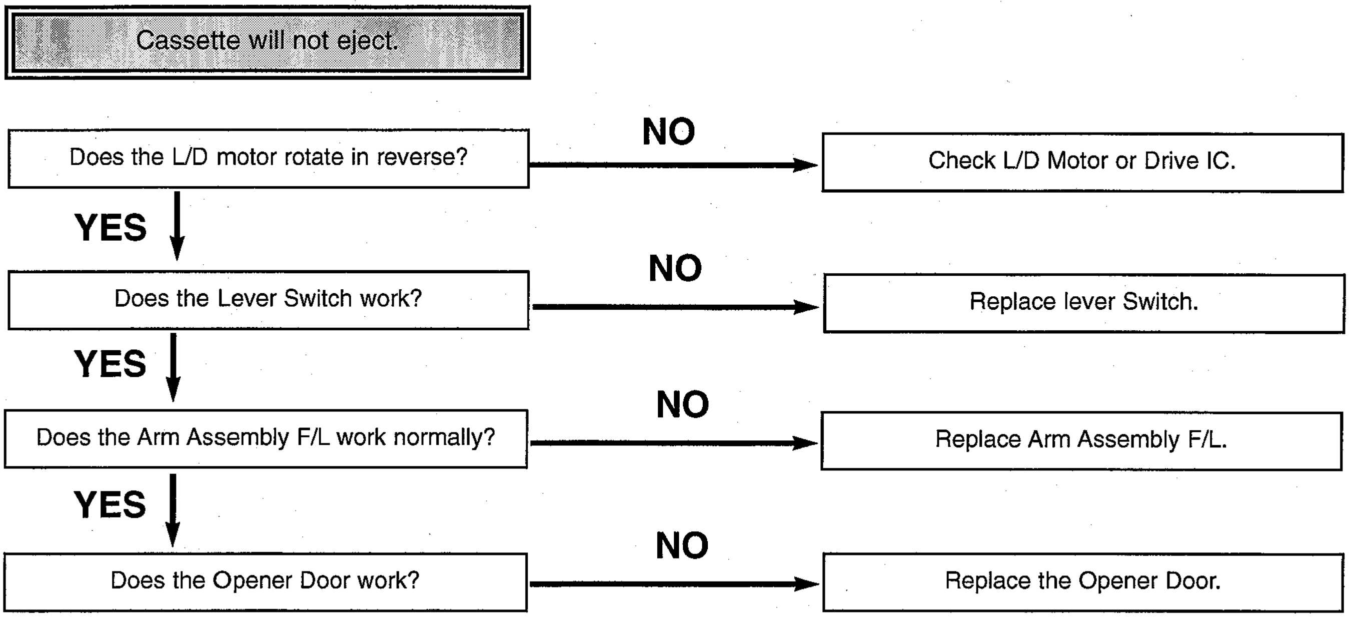
MECHANISM TROUBLESHOOTING GUIDE

2. Front Loading Mechanism

A.

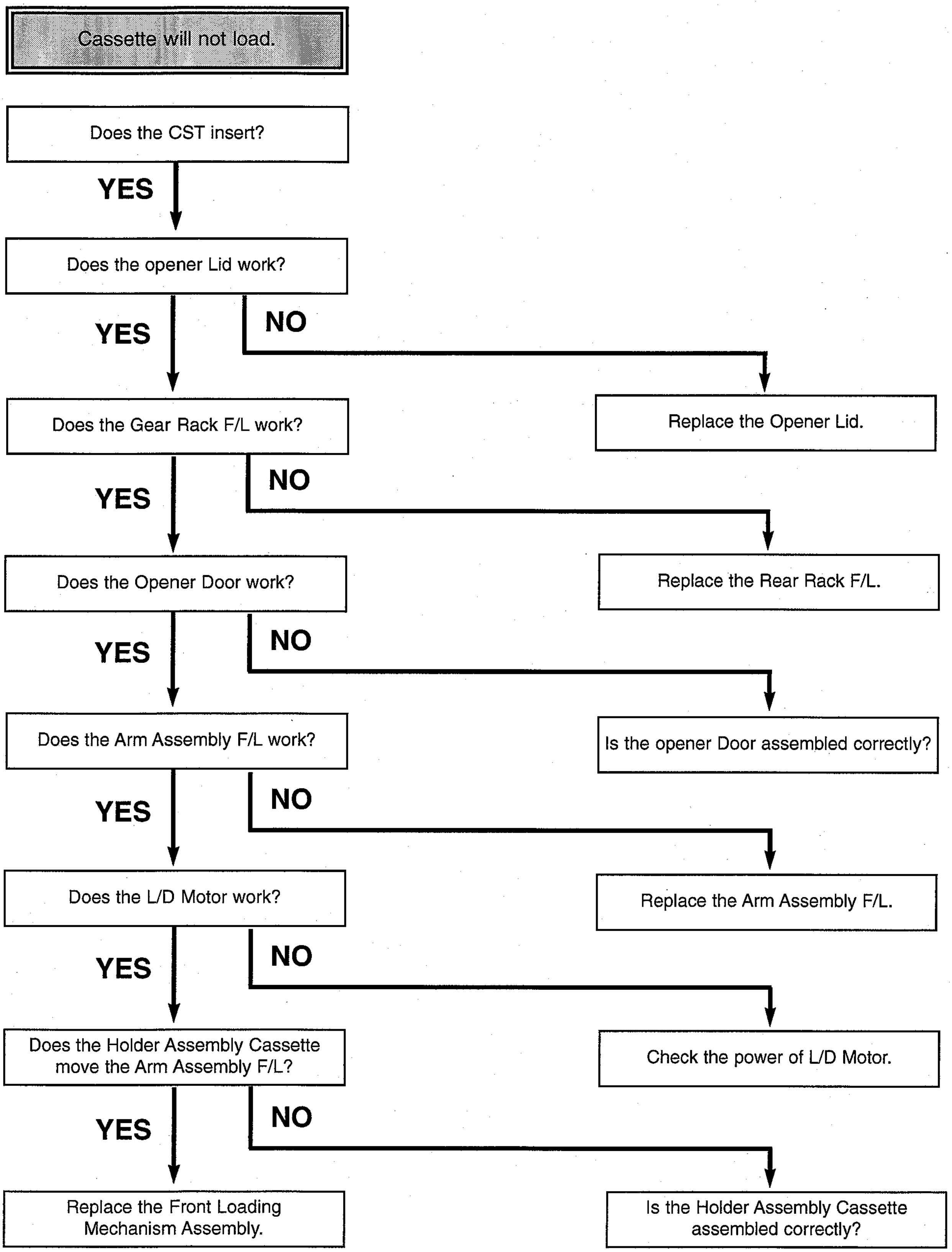

Cassette cannot be inserted.
Does the Lever Switch work?
NO
Is the Lever Switch Spring damaged or omitted?
YES
Replace or add the Lever Switch Spring.
NO
Does the F/L switch work normally?
NO
Replace F/L Switch.
YES
Check syscon circuit.
YES
Is the Vcc of Main P.C.Board 5V?
YES
NO
Check power circuit.
Is the voltage between cassette switch and GND on Main P.C.Board 5V?
YES
NO
Check Mode switch location and syscon circuit.
Is there a short circuit between cassette switch and GND on main P.C.Board?
YES
NO
Remove the short circuit part or Replace the main P.C.Board.
Replace F/L Switch.

B.


Cassette will not eject.
Does the L/D motor rotate in reverse?
NO
Check L/D Motor or Drive IC.
YES
Does the Lever Switch work?
NO
Replace lever Switch.
YES
Does the Arm Assembly F/L work normally?
NO
Replace Arm Assembly F/L.
YES
Does the Opener Door work?
NO
Replace the Opener Door.

MECHANISM TROUBLESHOOTING GUIDE

C.

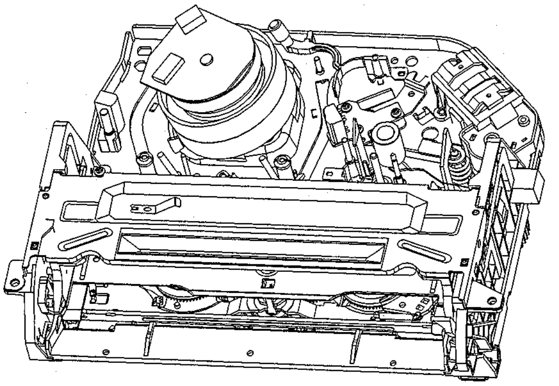

Cassette will not load.
Does the CST insert?
YES
Does the opener Lid work?
YES
NO
Replace the Opener Lid.
Does the Gear Rack F/L work?
YES
NO
Replace the Rear Rack F/L.
Does the Opener Door work?
YES
NO
Is the opener Door assembled correctly?
Does the Arm Assembly F/L work?
YES
NO
Replace the Arm Assembly F/L.
Does the L/D Motor work?
YES
NO
Check the power of L/D Motor.
Does the Holder Assembly Cassette move the Arm Assembly F/L?
YES
NO
Replace the Front Loading Mechanism Assembly.
Is the Holder Assembly Cassette assembled correctly?

VIDE-V25302

aiwa SERVICE

D33

English



SERVICE MANUAL

VIDEO MECHANISM

TYPE
P2 LRN106A
P4 LRN133A

aiwa

S/M Code No. 09-99B-336-8N2

DATA

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MAINTENANCE/INSPECTION PROCEDURE

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4. Supplies Required for Inspection and Maintenance ... 24
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MECHANISM TROUBLESHOOTING GUIDE

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REMOVING CASSETTE MANUALLY

1. Remove the loading motor.

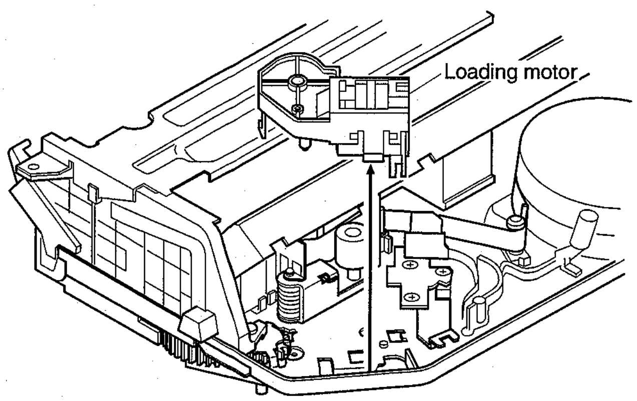

Loading motor

Fig. 1

2. Turn the gear connect in the direction of the arrow with you finger to perform unsledding.

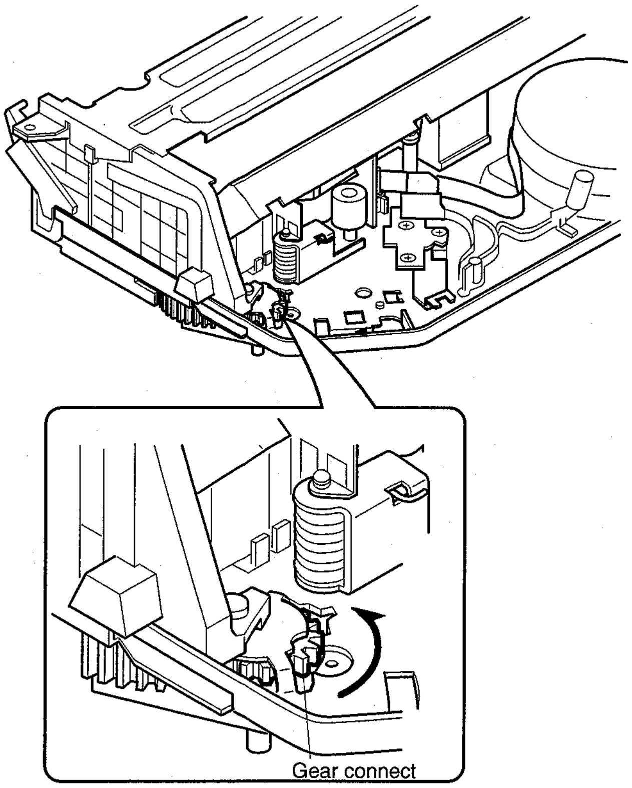

Gear connect

Fig. 2

3. Turn the capstan belt to take up slack tape.

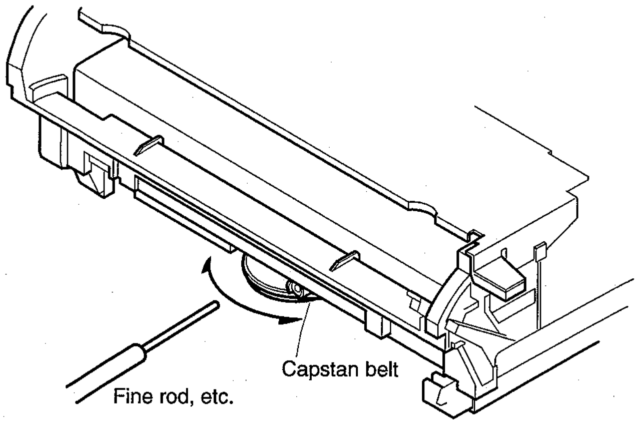
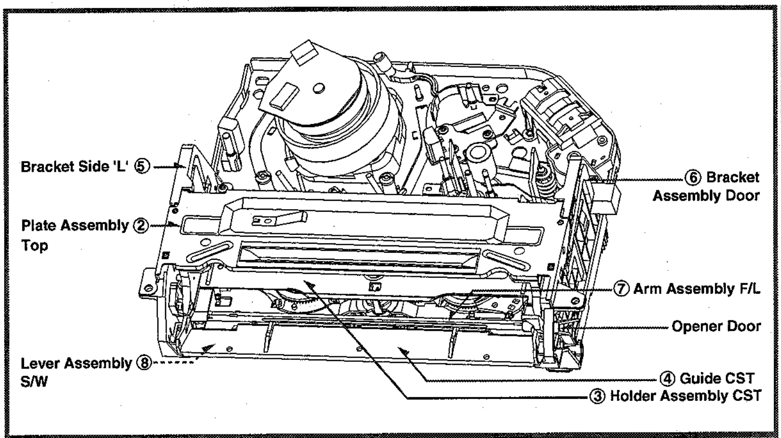

Capstan belt
Fine rod, etc.

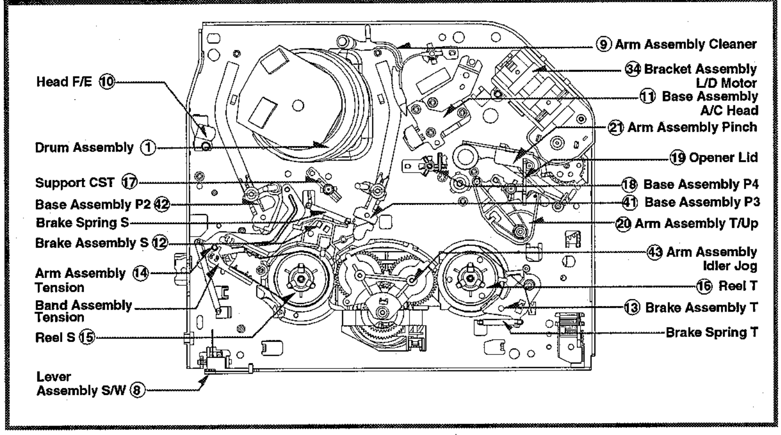
Fig. 3

4. Turn the gear connect in the direction of the arrow with you finger to perform unloading.

DECK MECHANISM PARTS LOCATIONS

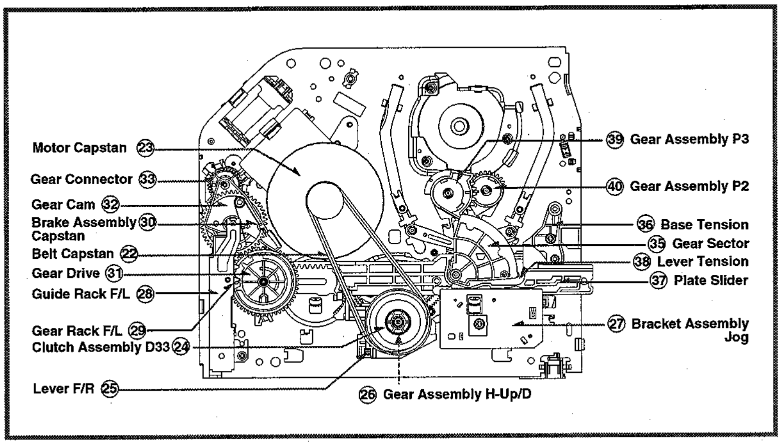
• Top View


Bracket Side 'L' ⑤
Plate Assembly ② Top
⑥ Bracket Assembly Door
⑦ Arm Assembly F/L
Opener Door
Lever Assembly ⑧ S/W
④ Guide CST
③ Holder Assembly CST


⑨ Arm Assembly Cleaner
Head F/E ⑩
㉞ Bracket Assembly L/D Motor
⑪ Base Assembly A/C Head
㉑ Arm Assembly Pinch
Drum Assembly ①
⑲ Opener Lid
Support CST ⑰
⑱ Base Assembly P4
Base Assembly P2 ㊷
㊶ Base Assembly P3
Brake Spring S
⑳ Arm Assembly T/Up
Brake Assembly S ⑫
㊸ Arm Assembly Idler Jog
Arm Assembly ⑭ Tension
⑯ Reel T
Band Assembly Tension
⑬ Brake Assembly T
Reel S ⑮
Brake Spring T
Lever Assembly S/W ⑧

Starting No.	Pracedure	Part	Fixing Type	Fig-ure
	1	Drum Assembly	3 Screws , Cap FPC	A-1
	2	Plate Assembly Top	Two Hooks	A-2
2	3	Holder Assembly CST	Chassis Hole	A-2
	4	Guide CST	2 Hooks	A-2
2,3,4	5	Bracket Side (L)	1 Screw	A-2
2,3,4	6	Bracket Assembly Door	1 Screw	A-2
2,3,4,5,6	7	Arm Assembly F/L	Chassis Hole	A-2
2,3,4,5	8	Lever Assembly S/W	Chassis Hole	A-2
	9	Arm Assembly Cleaner	Chassis Embossing	A-3
	10	Head F/E	2 Hooks	A-3
	11	Base Assembly A/C Head	1 Screw	A-3
	12	Brake Assembly S	Chassis Hole	A-4
2,3	13	Brake Assembly T	Chassis Hole	A-4
2,3,12,	14	Arm Assembly Tension	Chassis Hole	A-4
2,3,12,14	15	Reel S	Chassis Shaft	A-4
2,3,13	16	Reel T	Chassis Shaft	A-4
	17	Support CST	Chassis Embossing	A-5
	18	Base Assembly P4	Chassis Embossing	A-5
	19	Opener Lid	Chassis Embossing	A-5
19	20	Arm Assembly T/Up	Chassis Embossing	A-5
19	21	Arm Assembly Pinch	Chassis Shaft	A-5

• Bottom View


Motor Capstan ㉓
㊴ Gear Assembly P3
Gear Connector ㉝
㊵ Gear Assembly P2
Gear Cam ㉜
Brake Assembly ㉚ Capstan
㊱ Base Tension
㉟ Gear Sector
Belt Capstan ㉒
㊳ Lever Tension
Gear Drive ㉛
㊲ Plate Slider
Guide Rack F/L ㉘
㉗ Bracket Assembly Jog
Gear Rack F/L ㉙
Clutch Assembly D33 ㉔
Lever F/R ㉕
㉖ Gear Assembly H-Up/D

Starting No.	Pracedure	Part	Fixing Type	Fig-ure
	22	Belt Capstan		A-6
22	23	Motor Capstan	3 Screws	A-6
	24	Clutch Assembly D33	1 Washer	A-6
22,24	25	Lever F/R	1 Hook	A-6
22,24	26	Gear Assembly H-Up/D	2 Washers	A-6
	27	Bracket Assembly Jog	1 Screw	A-7
	28	Guide Rack F/L	1Screw	A-7
28	29	Gear Rack F/L		A-7
28, 29	30	Brake Assembly Capstan	Chassis Shaft	A-7
28, 29	31	Gear Drive	1 Washer	A-8
28, 29, 30	32	Gear Cam	Chassis Shaft	A-8
28, 29, 30, 31	33	Gear Connector	Chassis Shaft	A-8
	34	Bracket Assembly L/D Motor	3 Hooks	A-8
	35	Gear Sector	3 Washers	A-9
	36	BaseTension	1 Screw	A-9
22, 24, 25, 27 28, 29, 31, 35 36	37	Plate Slider	Chassis Shaft	A-9
22, 24, 25, 27 28, 29, 31, 35 36	38	Lever Tension	Chassis Hole	A-9
35	39	Gear Assembly P3	2 Hooks	A-10
35, 39	40	Gear Assembly P2	2 Hooks	A-10
35, 39, 40	41	Base Assembly P3	Chassis Hole	A-10
35, 39, 40, 41	42	Base Assembly P2	Chassis Hole	A-10
1, 2	43	Arm Assembly Idler Jog	1 Hook	A-10

NOTE : When reassembly perform the procedure in the reverse order.

1) When reassembling, confirm Mechanism and Mode Switch Alignment Position (Pefer to Page 17)
2) When disassembling, the Parts for Starting No. Should be removed first.

DECK MECHANISM DISASSEMBLY

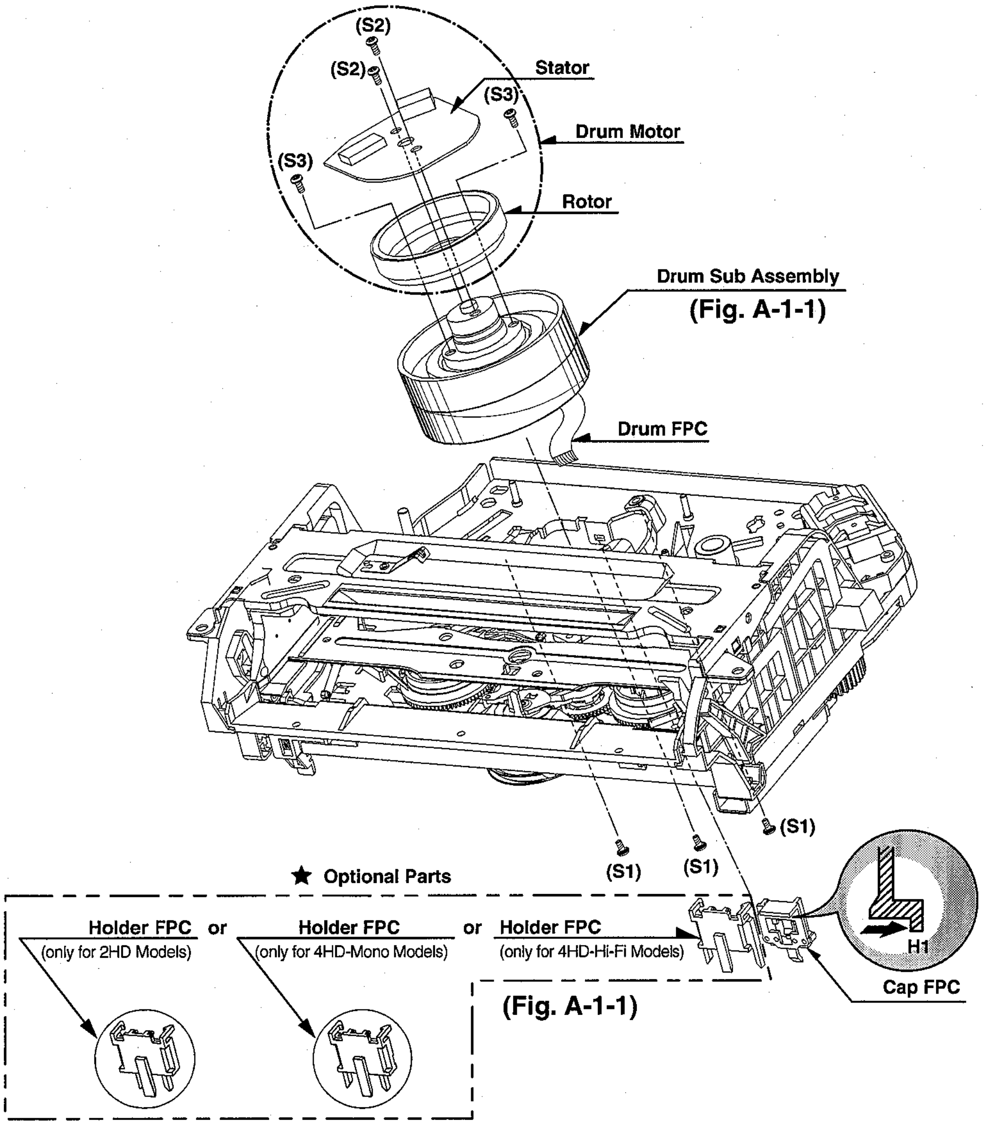

(S2)
(S2)
Stator
(S3)
Drum Motor
(S3)
Rotor
Drum Sub Assembly
(Fig. A-1-1)
Drum FPC
(S1)
(S1)
(S1)
★ Optional Parts
Holder FPC or
(only for 2HD Models)
Holder FPC
(only for 4HD-Mono Models)
or Holder FPC
(only for 4HD-Hi-Fi Models)
(Fig. A-1-1)
H1
Cap FPC

Fig. A-1

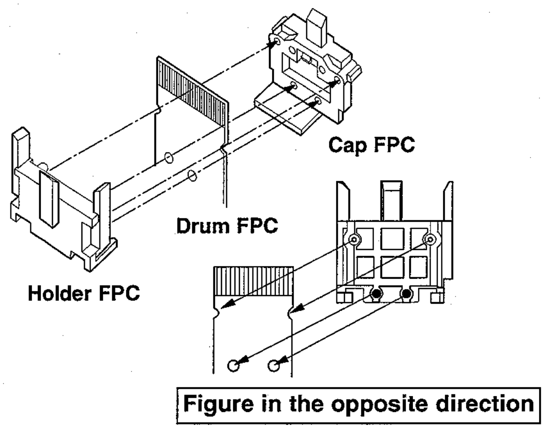
1. Drum Assembly (Fig. A-1-1)

1) Unhook the (H1) on the back side of the Chassis and separate the Cap FPC.
2) Remove three Screws (S1) and lift up the Drum Assembly.
3) Remove two Screws (S2) and Separate the Stator of Drum Motor.
4) Remove two Screws (S3) and Separate the Rotor of Drum Motor from the Drum Sub Assembly.

NOTE

(1) When reassembling Cap FPC, two Holes of Drum FPC are inserted to the two Bosses of Holder FPC correctly. (Refer to Fig. B-1)

(Fig. B-1)


Cap FPC
Drum FPC
Holder FPC
Figure in the opposite direction

DECK MECHANISM DISASSEMBLY

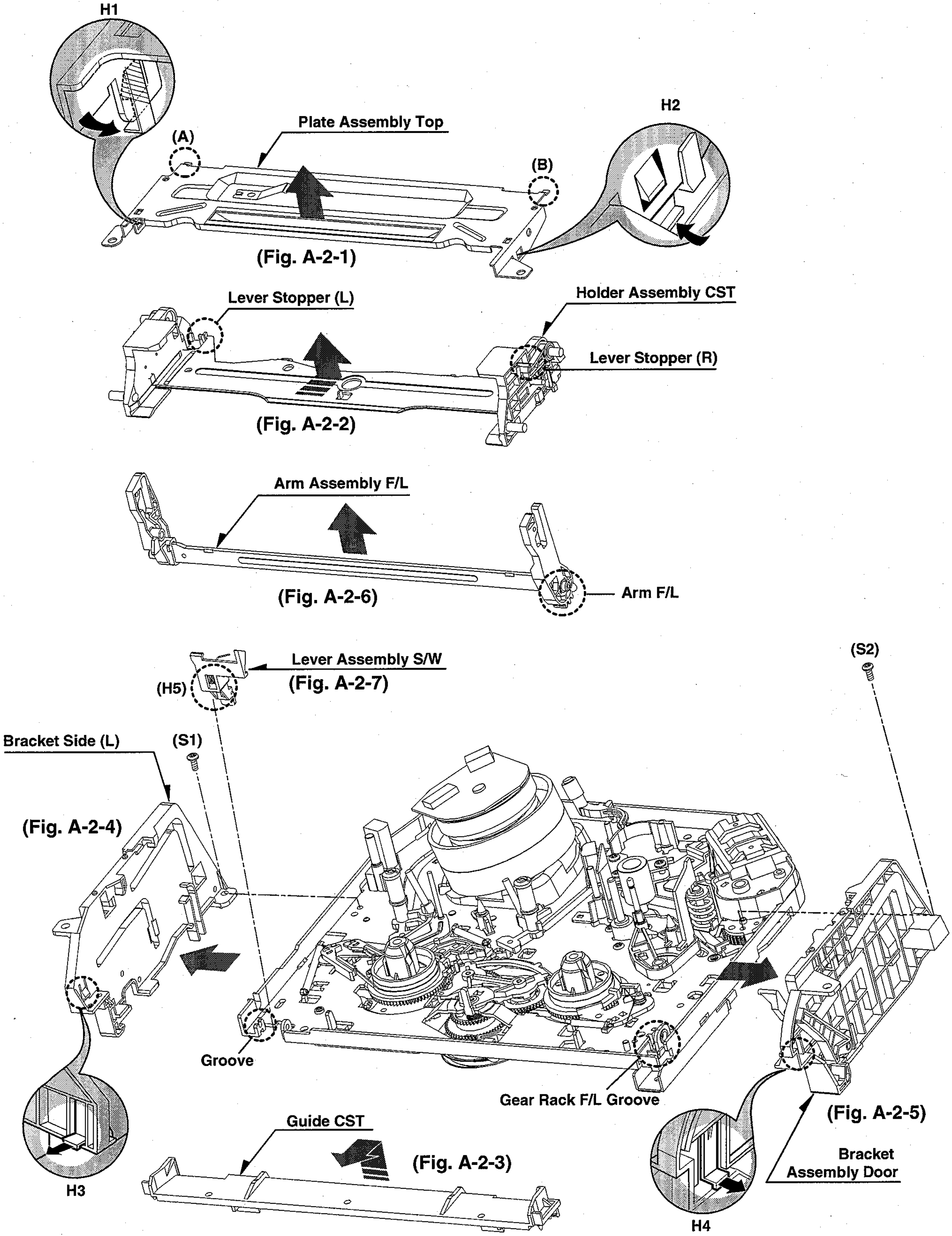

H1
(A)
Plate Assembly Top
(B)
H2
(Fig. A-2-1)
Lever Stopper (L)
Holder Assembly CST
Lever Stopper (R)
(Fig. A-2-2)
Arm Assembly F/L
(Fig. A-2-6)
Arm F/L
Lever Assembly S/W
(H5)
(Fig. A-2-7)
(S2)
Bracket Side (L)
(S1)
(Fig. A-2-4)
Groove
Gear Rack F/L Groove
Guide CST
(Fig. A-2-3)
(Fig. A-2-5)
Bracket
Assembly Door
H3
H4

Fig. A-2

DECK MECHANISM DISASSEMBLY

2. Plate Assembly Top (Fig. A-2-1)

1) Unhook the (H1) and separate the Left Side.
2) Unhook the (H2) and lift up the Plate Assembly Top.

NOTE

(1) When reassembling, confirm (A),(B) Part of the Plate Assembly Top is inserted to the (L),(R) Grooves of the Bracket Side(L) and Bracket Assembly Door.

3. Holder Assembly CST (Fig.A-2-2)

1) Push the Lever Stopper(L),(R) in the direction of the arrows (A), (B), and move the Holder Assembly CST.

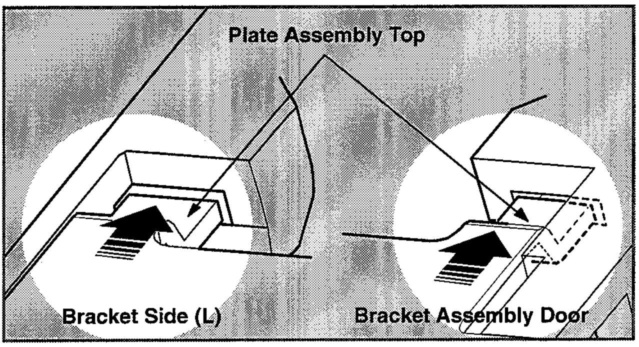
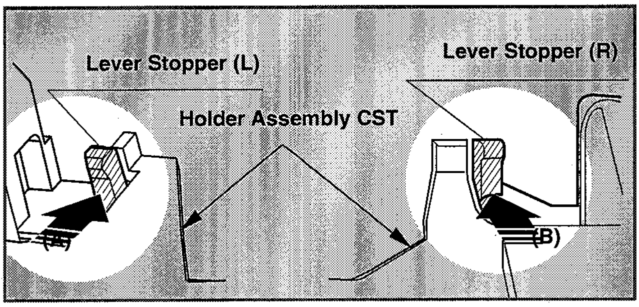


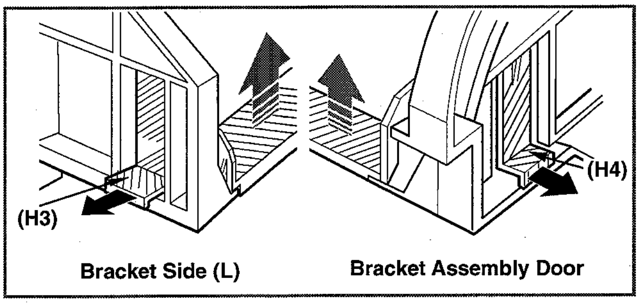
Plate Assembly Top
Bracket Side (L)
Bracket Assembly Door

2) Push the Bracket Assembly Door to the right and lift up the Holder Assembly CST along the Guide Groove of the Bracket Assembly Door.


Lever Stopper (L)
Lever Stopper (R)
Holder Assembly CST
(A)
(B)

4. Guide CST (Fig.A-2-3)

1) Push two Hooks(H3),(H4) in the direction of the arrow and separate the left side.
2) Unhook (H5),(H6) as above No.1) and disassemble the Guide CST in the direction of the arrow.


(H3)
(H4)
Bracket Side (L)
Bracket Assembly Door

5. Bracket Side(L) (Fig. A-2-4)/ Bracket Assembly Door (Fig.A-2-5)

1) Remove the Screw (S1) and disassemble the Bracket Side(L) in the front.
2) Remove the Screw (S2) and disassemble the Bracket Assembly Door in the front.

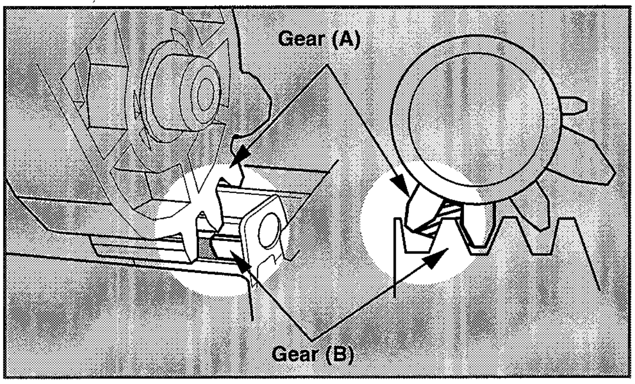
6. Arm Assembly F/L (Fig. A-2-6)

1) Push the Arm Assembly F/L to the left and lift up it.

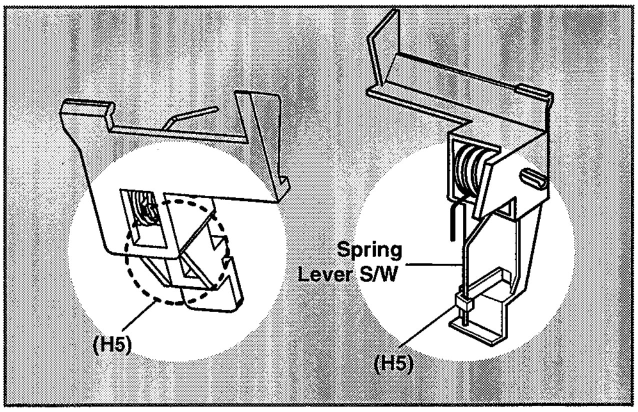
NOTE

(1) When reassembling, confirm that the Gear(A) of the Arm F/L and the Gear(B) of the Gear Rack F/L are assembled as below.

7. Lever Assembly S/W (Fig. A-2-7)

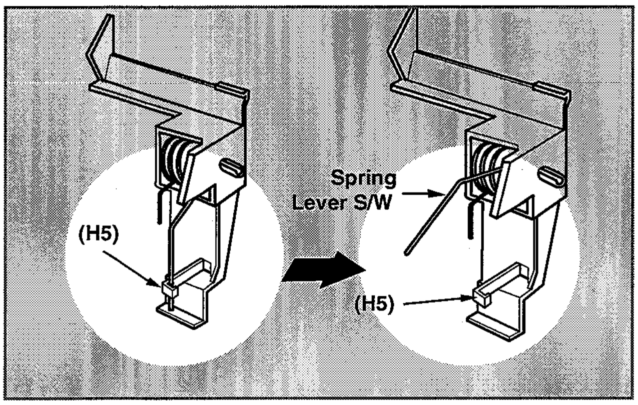

Gear (A)
Gear (B)

1) Hook the Spring Lever S/W on (H5).
2) Lift up the left side of the Lever S/W from the Groove(A) of the Chassis.


Spring Lever S/W
(H5)
(H5)

NOTE

(1) Place the Spring Lever S/W of the above (No.1) as original position.


Spring Lever S/W
(H5)
(H5)

DECK MECHANISM DISASSEMBLY

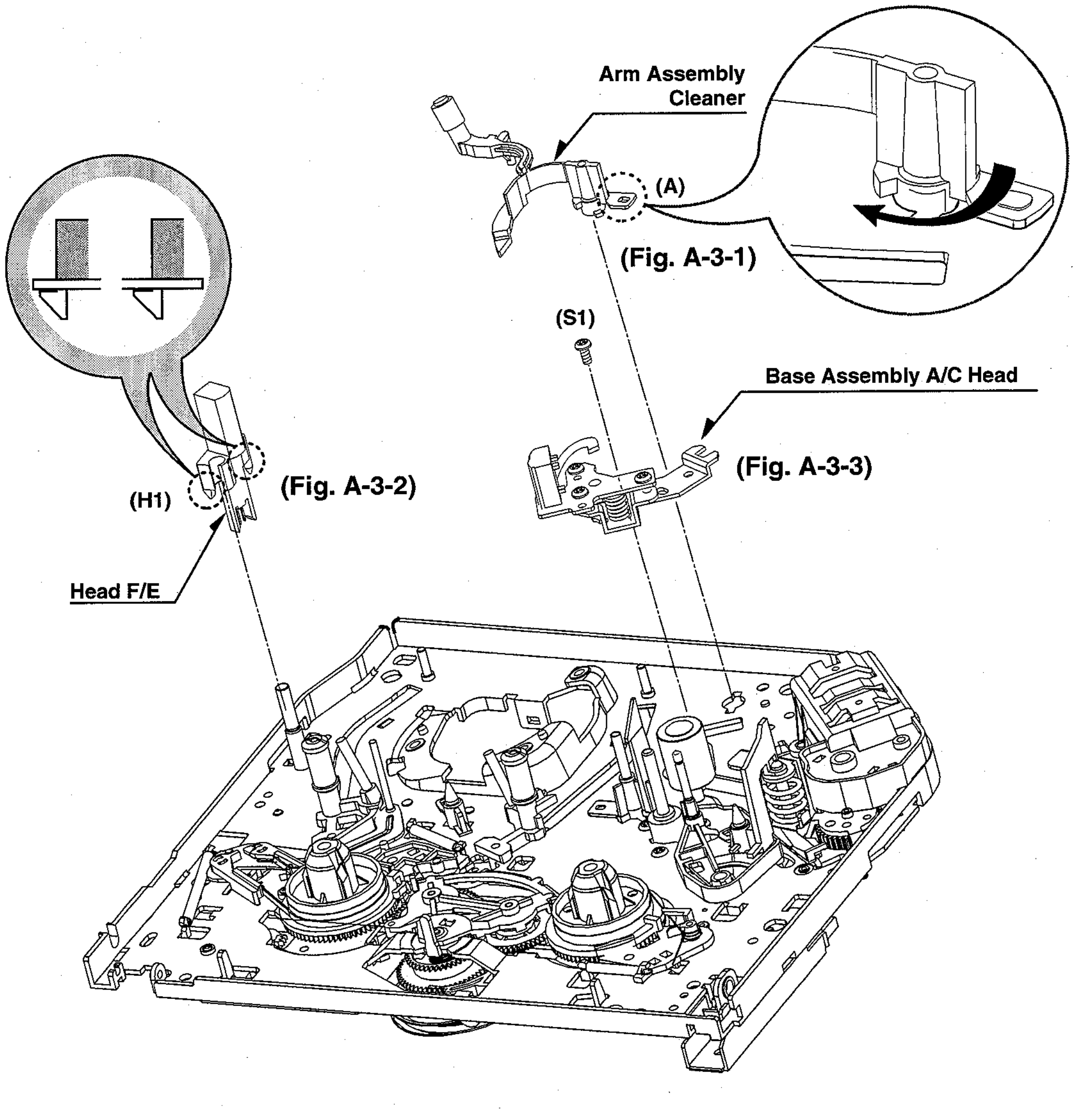

Arm Assembly Cleaner
(A)
(Fig. A-3-1)
(S1)
Base Assembly A/C Head
(Fig. A-3-3)
(H1)
(Fig. A-3-2)
Head F/E

Fig. A-3

8. Arm Assembly Cleaner(Fig. A-3-1)

1) Break away the (A) part shown above Fig. A-3-1 from the Embossing of the Chassis in the clockwise direction and lift up the Arm Assembly Cleaner.

9. Head F/E (Fig. A-3-2)

1) Unhook the two Hooks (H1) on the back side of the Chassis and lift up the Head F/E.

10. Base Assembly A/C Head (Fig. A-3-3)

1) Remove the Screw (S1) and lift up the Base Assembly A/C Head.

DECK MECHANISM DISASSEMBLY

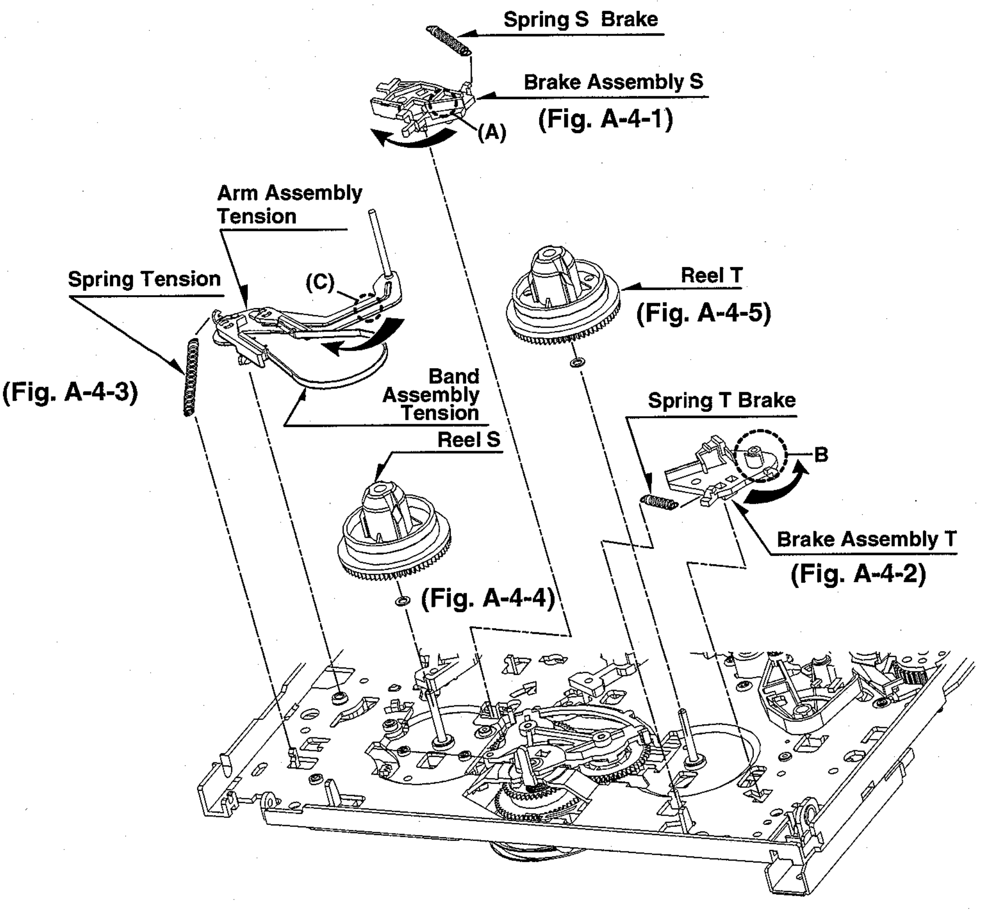

Spring S Brake
Brake Assembly S
(A)
(Fig. A-4-1)
Arm Assembly Tension
Spring Tension
(C)
Reel T
(Fig. A-4-5)
(Fig. A-4-3)
Band Assembly Tension
Reel S
Spring T Brake
B
Brake Assembly T
(Fig. A-4-2)
(Fig. A-4-4)

Fig. A-4

11. Brake Assembly S (Fig. A-4-1)

1) Remove the Spring S Brake.
2) Hold the (A) part shown above Fig. A-4-1 and turn to the clockwise direction, and then lift up the Brake Assembly S.

NOTE

(1) When reassembling, be careful not to change the Spring with below No.12.(Refer to Fig. B-2).

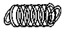
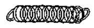
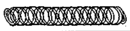
12. Brake Assembly T (Fig. A-4-2)

1) Remove the Spring T Brake.
2) Hold the (B) part shown above Fig. A-4-2 and turn to the counterclockwise direction, and then lift up the Brake Assembly T.

NOTE

(1) When reassembling, be careful not to change the Spring with above No.11.(Refer to Fig. B-2).

(Difference for Springs) **(Fig. B-2)**

	**Spring T Brake** Color (Black)
	**Spring S Brake**
	**Spring Tension**

13. Arm Assembly Tension (Fig. A-4-3)

1) Remove the Spring Tension.
2) Hold the (C) part shown above Fig. A-4-3 and turn to the clockwise direction, and then lift up the Arm Assembly Tension.

NOTE

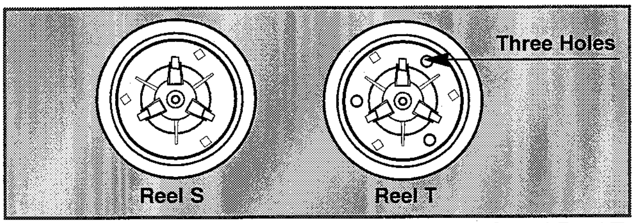
(1) When reassembling, be careful not to change the Spring with above No.11,12.(Refer to Fig. B-2).

14. Reel S (Fig. A-4-4) & Reel T (Fig. A-4-5)

1) Lift up the Reel S and Reel T.

NOTE

(1) When reassembling, be careful not to change the Reel S and Reel T each other.


Three Holes
Reel S
Reel T

(2) Confirm two Slide Washers under the Reel S and Reel T.

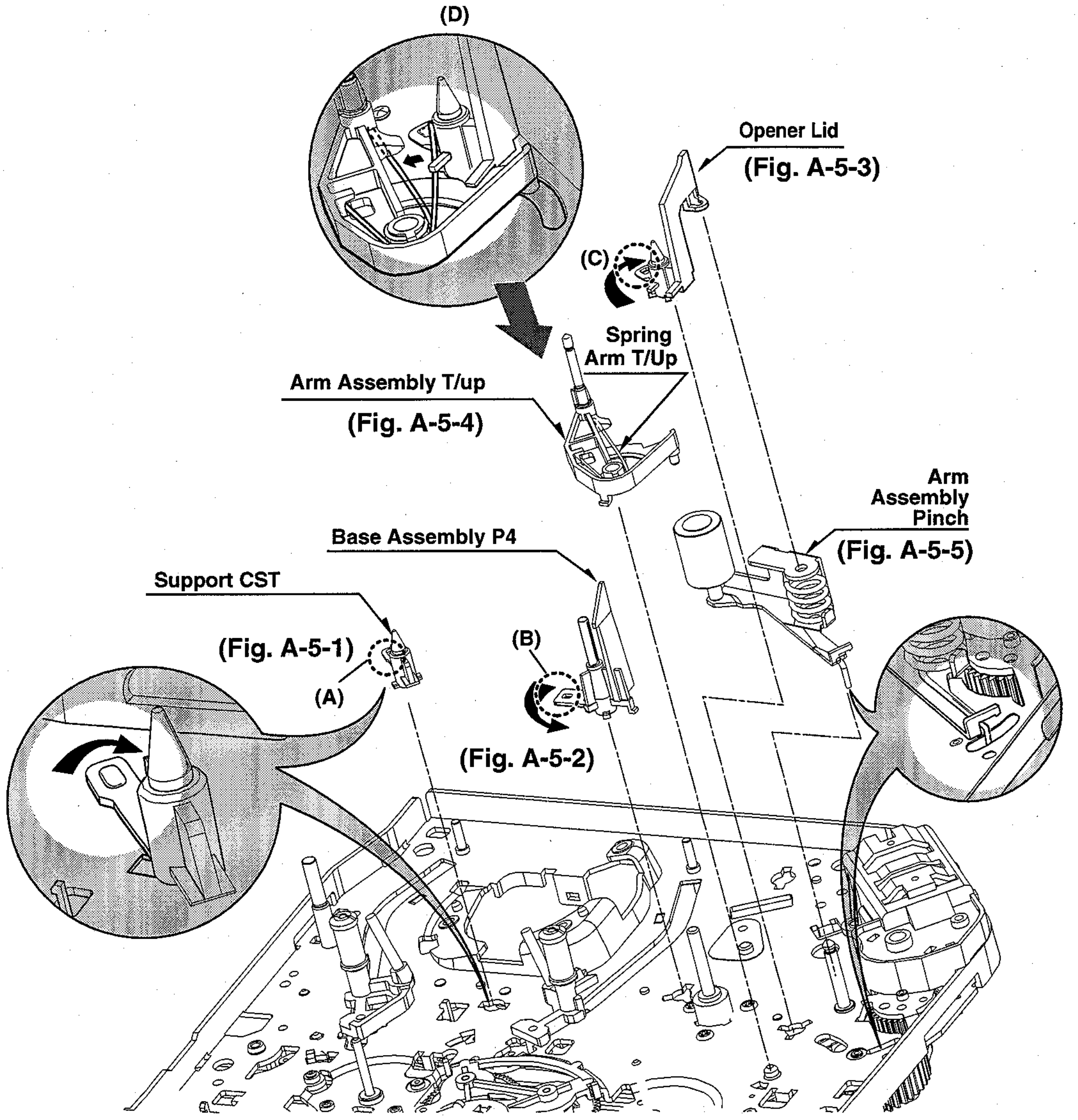

(D)
Opener Lid
(Fig. A-5-3)
(C)
Spring
Arm T/Up
Arm Assembly T/up
(Fig. A-5-4)
Arm
Assembly
Pinch
(Fig. A-5-5)
Base Assembly P4
Support CST
(Fig. A-5-1)
(A)
(B)
(Fig. A-5-2)

Fig. A-5

15. Support CST (Fig. A-5-1)

1) Break away the (A) part shown above Fig. A-5-1 from the Embossing of the Chassis in the clockwise direction, and lift up the Support CST.

16. Base Assembly P4 (Fig. A-5-2)

1) Break away the (B) part shown above Fig. A-5-2 from the Embossing of the Chassis in the counterclockwise direction and lift up the Base Assembly P4.

17. Opener Lid (Fig. A-5-3)

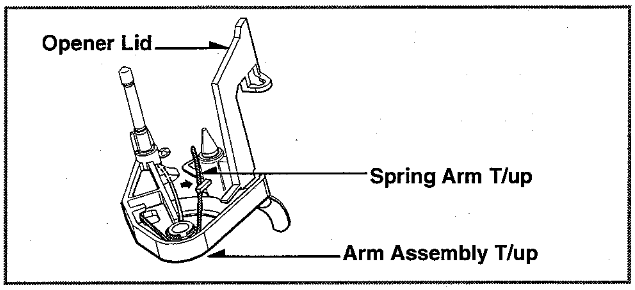
1) Hook the Spring Arm T/up on the Split digged under the Arm Assembly T/up.(Refer to Fig.A-5-4(D)).
2) Break away the (C) Part of the Opener Lid from the Embossing of the Chassis in the Clockwise direction and lift up the Opener Lid.

18. Arm Assembly T/up (Fig. A-5-4)

1) Confirm that the Spring Arm T/up is placed as above (No.17.1).
2) Lift up the Arm Assembly T/up.

NOTE

(1) When reassembling, unhook the Spring Arm T/up Shown above (No.17.1) to the original position.


Opener Lid
Spring Arm T/up
Arm Assembly T/up

19. Arm Assembly Pinch (Fig. A-5-5)

1) Lift up the Arm Assembly Pinch.

DECK MECHANISM DISASSEMBLY

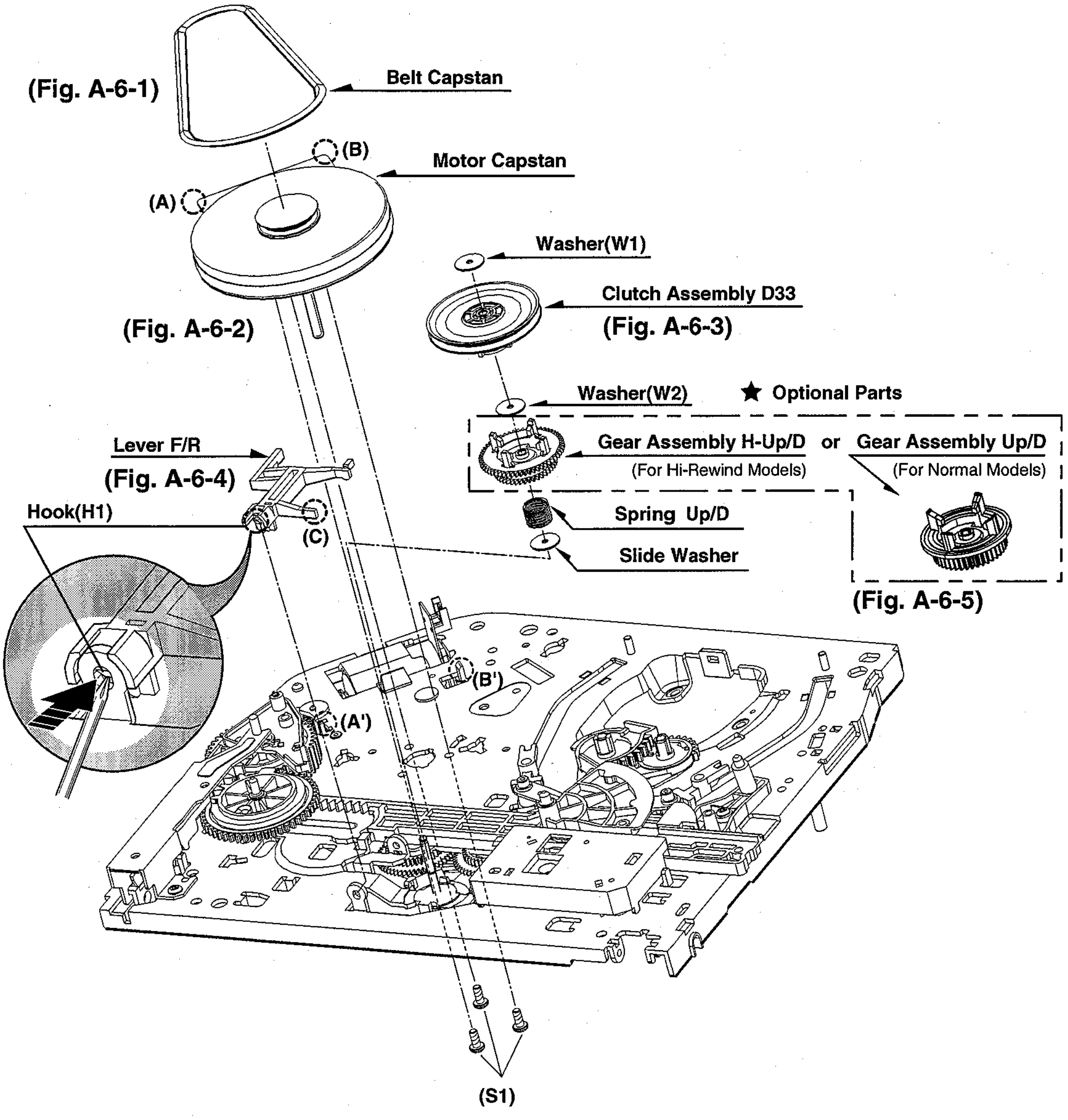

(Fig. A-6-1)
Belt Capstan
(B)
Motor Capstan
(A)
Washer(W1)
Clutch Assembly D33
(Fig. A-6-3)
(Fig. A-6-2)
Washer(W2)
★ Optional Parts
Lever F/R
(Fig. A-6-4)
Gear Assembly H-Up/D
(For Hi-Rewind Models)
or
Gear Assembly Up/D
(For Normal Models)
Hook(H1)
(C)
Spring Up/D
Slide Washer
(Fig. A-6-5)
(B')
(A')
(S1)

Fig. A-6

20. Belt Capstan (Fig. A-6-1)/ Motor Capstan (Fig. A-6-2)

1) Remove the Belt Capstan.
2) Remove three Screws(S1) on the back side of the Chassis and lift up the Motor Capstan.

NOTE

(1) When reassembling, Confirm the (A), (B) parts of Motor Capstan is located to the (A'), (B') of the Chassis.

21. Clutch Assembly D33 (Fig. A-6-3)

1) Remove the Washer(W1) and lift up the Clutch Assembly D33.

22. Lever F/R (Fig. A-6-4)

1) Unhook the (H1) shown above Fig. A-6-4 and lift up the Lever F/R.

NOTE

(1) When reassembling, move the (C) part of the Lever F/R up and down, then confirm if it is returned to original position.

23. Gear Assembly H-Up/D or Gear Assembly Up/D (Fig. A-6-5)

1) Remove the Washer(W2) and lift up the Gear Assembly H-up/D.
2) Remove the Spring Up/D.
3) Remove the Slide Washer.

NOTE

(1) Gear Assembly H-Up/D is for Hi-Rewind Models.
(2) Gear Assembly Up/D is for Normal Models except Hi-Rewind Models.

DECK MECHANISM DISASSEMBLY

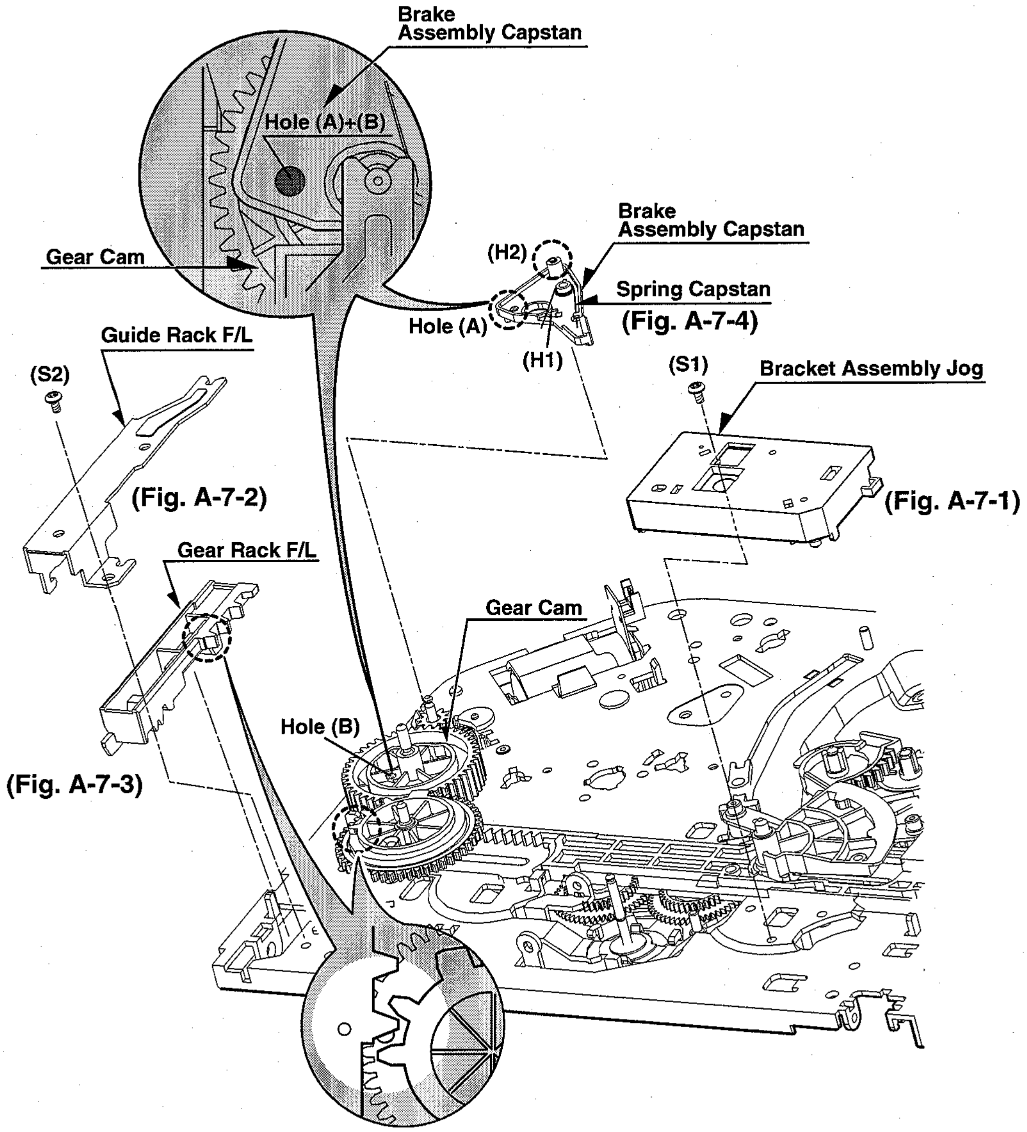

Brake
Assembly Capstan
Hole (A)+(B)
Gear Cam
Guide Rack F/L
(S2)
(Fig. A-7-2)
Gear Rack F/L
(Fig. A-7-3)
Hole (B)
Gear Cam
Brake
Assembly Capstan
(H2)
Spring Capstan
Hole (A)
(Fig. A-7-4)
(H1)
(S1)
Bracket Assembly Jog
(Fig. A-7-1)

Fig. A-7

24. Bracket Assembly Jog (Fig. A-7-1)

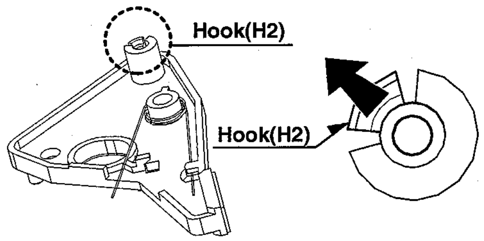
1) Remove the Screw(S1) and lift up the Bracket Assembly Jog.

25. Guide Rack F/L (Fig. A-7-2)/
Gear Rack F/L (Fig. A-7-3)

1) Remove the Screw(S2) and lift up the Guide Rack F/L.
2) Lift up the Gear Rack F/L.

26. Brake Assembly Capstan (Fig. A-7-4)

1) Hook the Spring Capstan on the Hook(H1).
2) Unhook the Hook(H2) and lift up the Brake Assembly Capstan.(Refer to Fig. to the right)


Hook(H2)
Hook(H2)

NOTE

(1) When reassembling, confirm that the Hole(A) of the Brake Assembly Capstan is aligned to the Hole(B) of the Gear Cam.
(Refer to above Fig. A-7-4).

DECK MECHANISM DISASSEMBLY

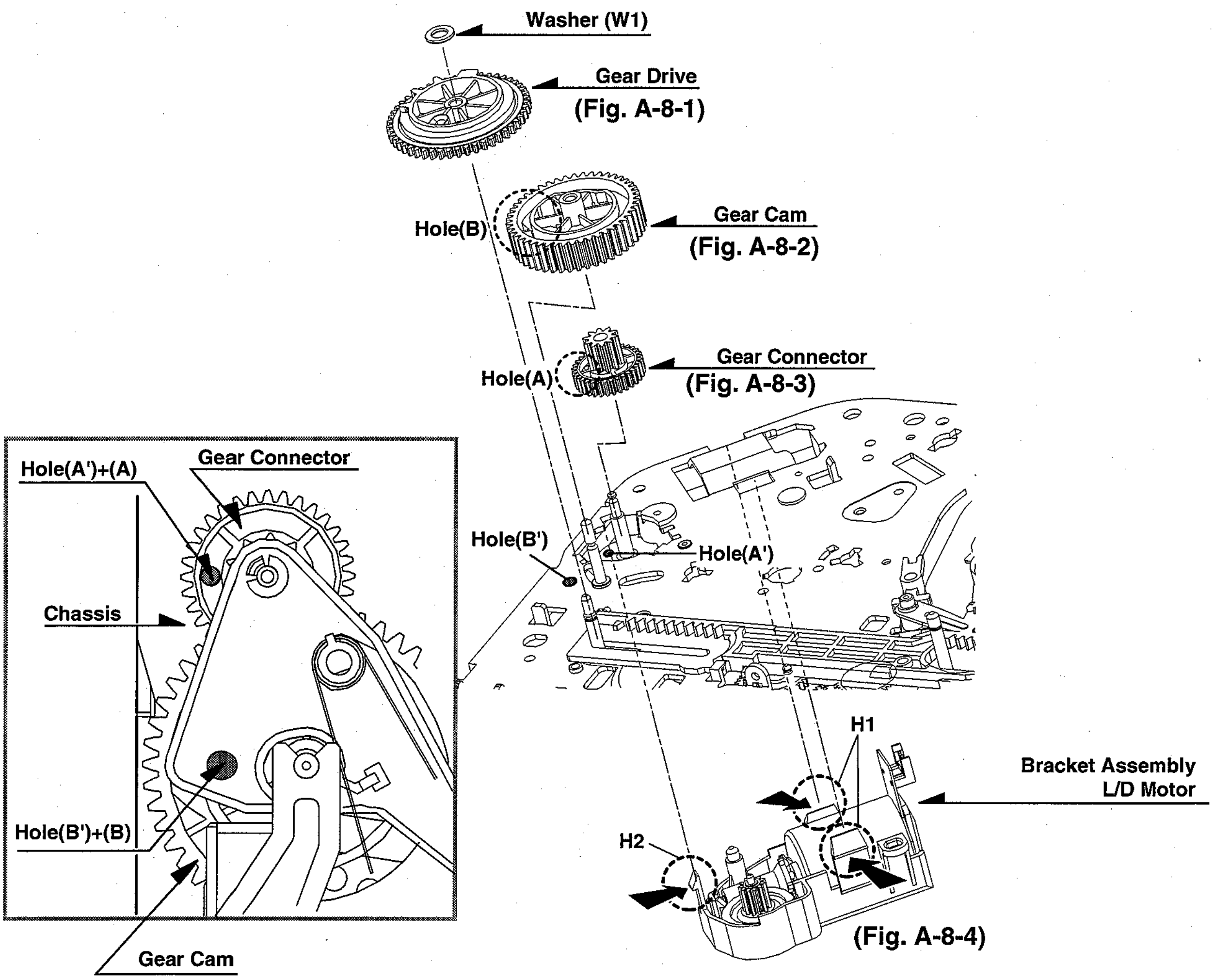

Washer (W1)
Gear Drive
(Fig. A-8-1)
Hole(B)
Gear Cam
(Fig. A-8-2)
Hole(A)
Gear Connector
(Fig. A-8-3)
Hole(A')+(A)
Gear Connector
Chassis
Hole(B')+(B)
Gear Cam
Hole(B')
Hole(A')
H1
H2
Bracket Assembly
L/D Motor
(Fig. A-8-4)

Fig. A-8

27. Gear Drive (Fig. A-8-1)/ Gear Cam (Fig. A-8-2)/ Gear Connector (Fig. A-8-3)

1) Remove the Washer(W1) and lift up the Gear Drive.
2) Lift up the Gear Cam.
3) Lift up the Gear Connector.

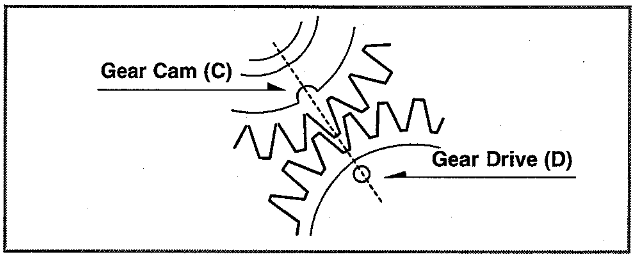
NOTE

(1) When reassembling, confirm that the Hole (A) of the Gear Connector is aligned to the Hole (A') of the Chassis (Fig. A-8-3).

(2) When reassembling, confirm that the Hole (B) of the Gear Cam is aligned to the Hole (B') of the Chassis (Fig. A-8-2).

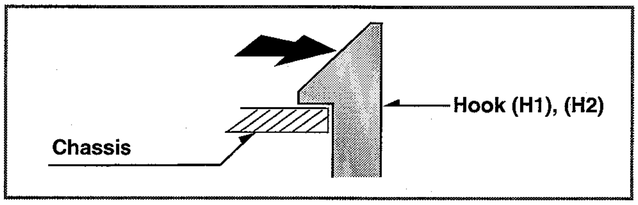
(3) When reassembling, confirm that the (C) part of the Gear Cam is aligned to the (D) part of the Gear Drive as shown Fig. B-3

(Fig. B-3)


Gear Cam (C)
Gear Drive (D)

28. Bracket Assembly L/D Motor (Fig. A-8-4)

1) Unhook the three Hooks(H1),(H2) and push down the Bracket Assembly L/D Motor.


Hook (H1), (H2)
Chassis

DECK MECHANISM DISASSEMBLY

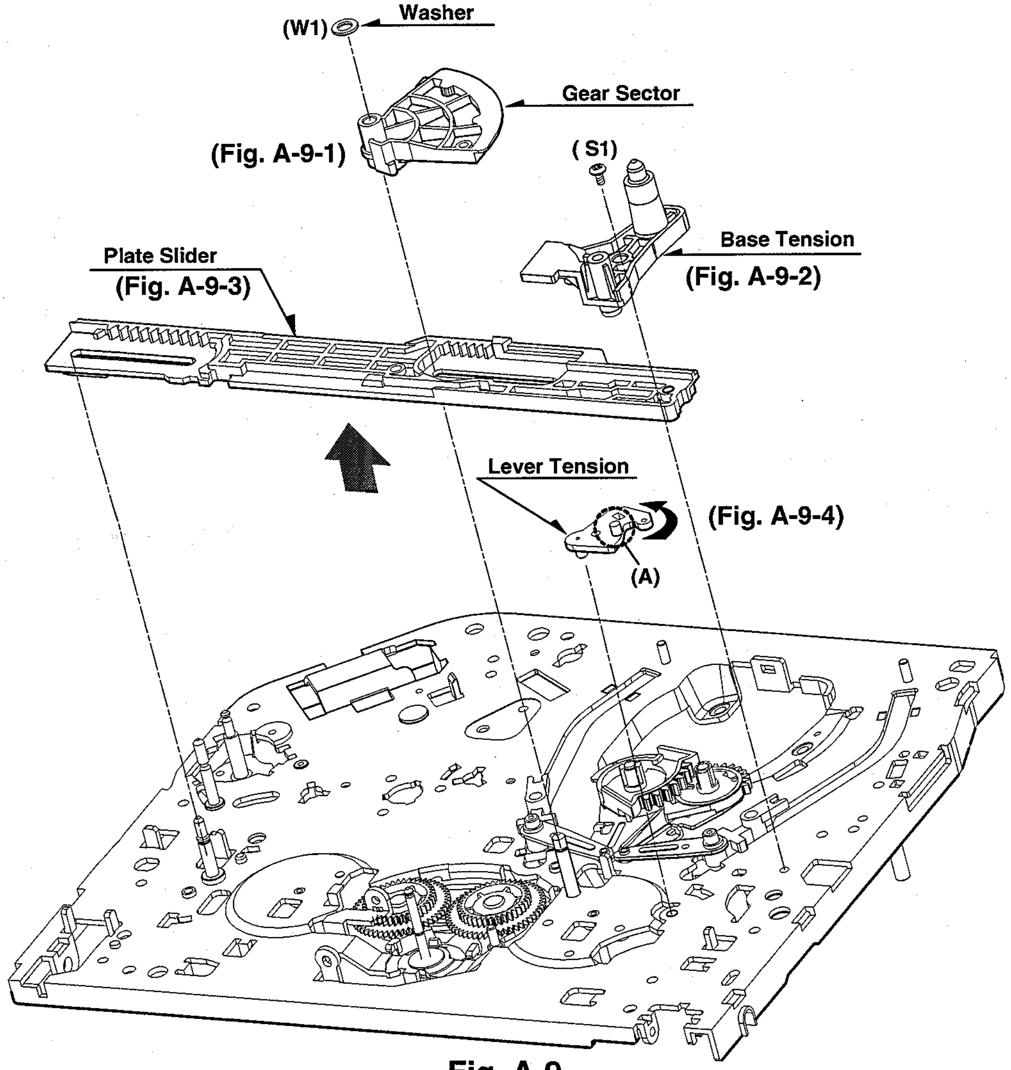

(W1)
Washer
Gear Sector
(Fig. A-9-1)
(S1)
Base Tension
(Fig. A-9-2)
Plate Slider
(Fig. A-9-3)
Lever Tension
(Fig. A-9-4)
(A)

Fig. A-9

29. Gear Sector (Fig. A-9-1)

1) Remove the Washer(W1) and lift up the Gear Sector.

30. Base Tension (Fig. A-9-2)/ Plate Slider (Fig. A-9-3)/ Lever Tension (Fig. A-9-4)

1) Remove the Screw(S1) and lift up the Base Tension.
2) Lift up the Plate Slider.
3) Hold the (A) Part of the Lever Tension and turn to the counterclockwise direction, and then lift up the Lever Tension.

NOTE

(1) When reassembling, turn the Lever Tension to the clockwise direction in maximum.

DECK MECHANISM DISASSEMBLY

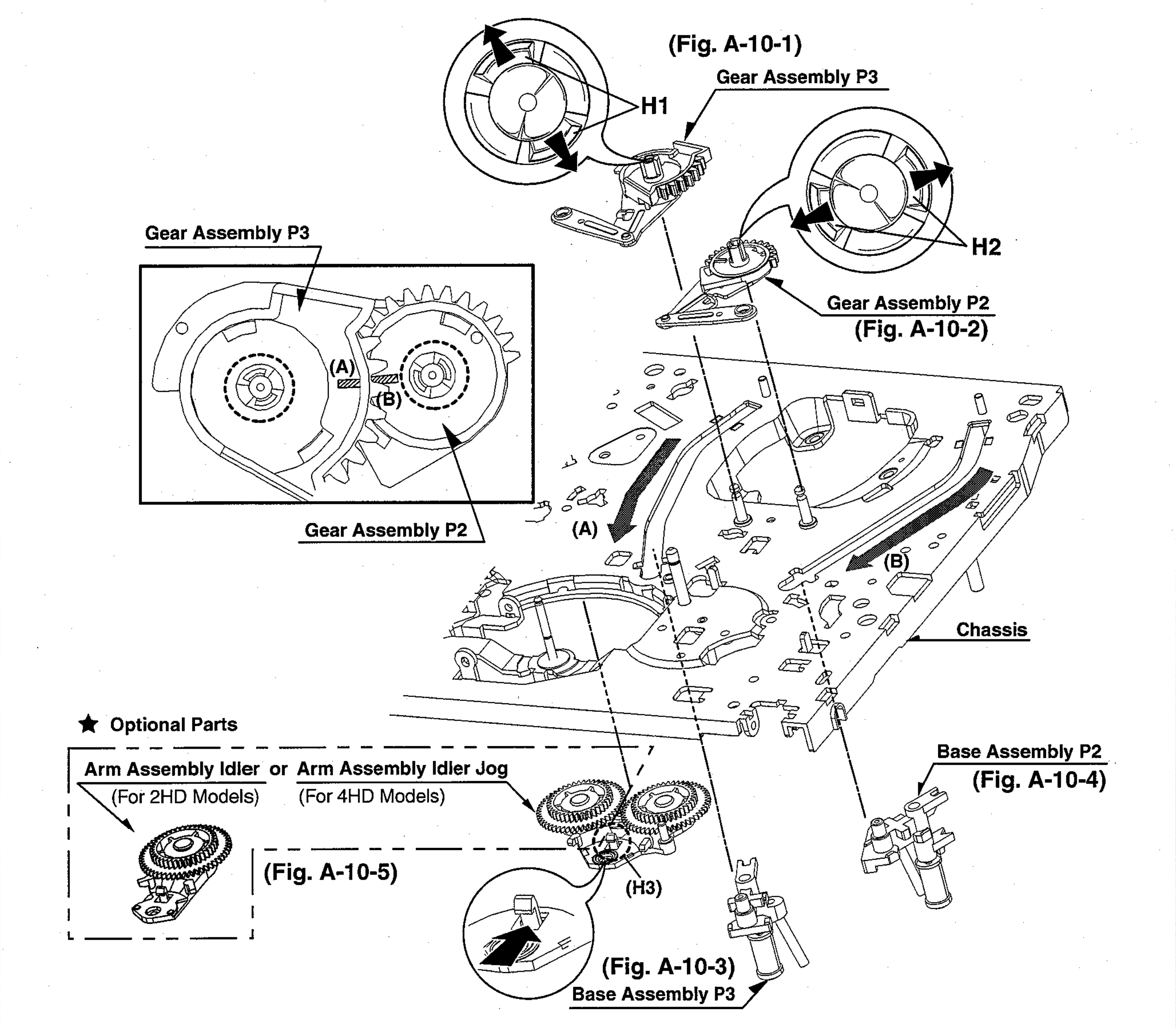

(Fig. A-10-1)
Gear Assembly P3
H1
Gear Assembly P3
H2
Gear Assembly P2
(Fig. A-10-2)
(A)
(B)
Gear Assembly P2
(A)
(B)
Chassis
★ Optional Parts
Arm Assembly Idler or Arm Assembly Idler Jog
(For 2HD Models)
(For 4HD Models)
Base Assembly P2
(Fig. A-10-4)
(Fig. A-10-5)
(H3)
(Fig. A-10-3)
Base Assembly P3

Fig. A-10

31. Gear Assembly P3 (Fig. A-10-1)/ Gear Assembly P2 (Fig. A-10-2)

1) Unhook the two Hooks(H1) and lift up the Gear Assembly P3.
2) Unhook the two Hooks(H2) and lift up the Gear Assembly P2.

32. Base Assembly P3 (Fig. A-10-3)/ Base Assembly P2 (Fig. A-10-4)

1) Move the Base Assembly P3 in the direction of the arrow of the Chassis Hole(A) and push down the Base Assembly P3.
2) Move the Base Assembly P2 in the direction of the arrow of the Chassis Hole(B) and push down the Base Assembly P2.

33. Arm Assembly Idler Jog or Arm Assembly Idler (Fig. A-10-5)

1) Unhook the Hook(H3) and push down the Arm Assembly Idler Jog.

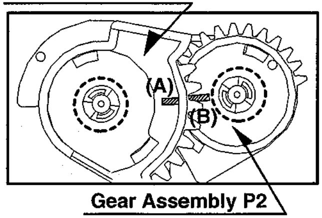
NOTE

1) Arm Assembly Idler Jog is for 4HD Models.
2) Arm Assembly Idler is for 2HD Models.

NOTE

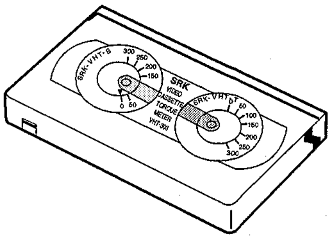
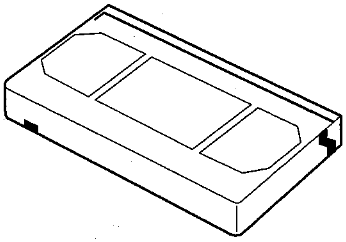
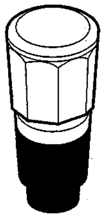
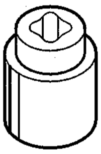
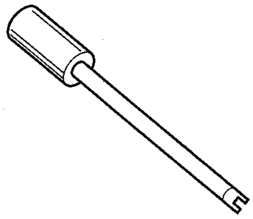
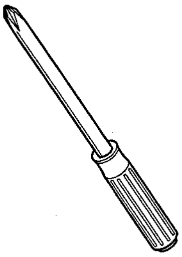
1) When reassembling, confirm that the (A) Part of the Gear Assembly P3 is aligned to the (B) Part of the Gear Assembly P2 as shown below.

(Unloading Condition)


Gear Assembly P3
(A)
(B)
Gear Assembly P2

DECK MECHANISM ADJUSTMENT

• Tools and Fixtures for Service

1. Cassette Torque meter **SRK-VHT-303(Not SVC part)**  SRK-VHT-S 300 250 200 150 0 50 SRK VIDEO CASSETTE TORQUE METER VHT-303 SRK-VHT-T 0 50 100 150 200 250 300	**2. Alignment tape** **(See figure below)** 	**3. Torque gauge** **600g.Cm ATG** 
4. Torque gauge adaptor 	**5. Post height adjusting driver** **Parts No:** **SV-TGO-030-000 (SMALL)** **SV-TGO-020-000 (LARGE)** 	**6. + Type driver (ø 5)** 

ALIGNMENT TAPES FOR ADJUSTMENT

Derivation No.		A	B	C	D
Mechanism		PAL	PAL	NTSC	NTSC
Adjustment Items		SP/LP 2/4 Head	SP 2 Head	SP/LP/EP 2/4 Head	SP 2 Head
FM Envelope		TTV-P2L	TTV-P2	TTV-N1 (TTN-N12)	TTV-N2
A/C Head	Slantness	A commercially available tape			
	Height	TTV-P1 (TTV-P1L)	TTV-P1	TTV-N1 (TTV-N12) (TTV-N1E)	TTV-N1 (TTV-N12)
	Azimuth	TTV-P2	TTV-P2	TTV-N2	TTV-N2
X-value		TTV-P2 (TTV-P2L)	TTV-P2	TTV-N2 TTV-N2E TTV-N12	TTV-N2
RG Post Inclination		A commercially available tape			
Tape Back Tension		SRK-VHT-303			

The numbers in ( ) parenthesis can be used as the substiture.

DECK MECHANISM ADJUSTMENT

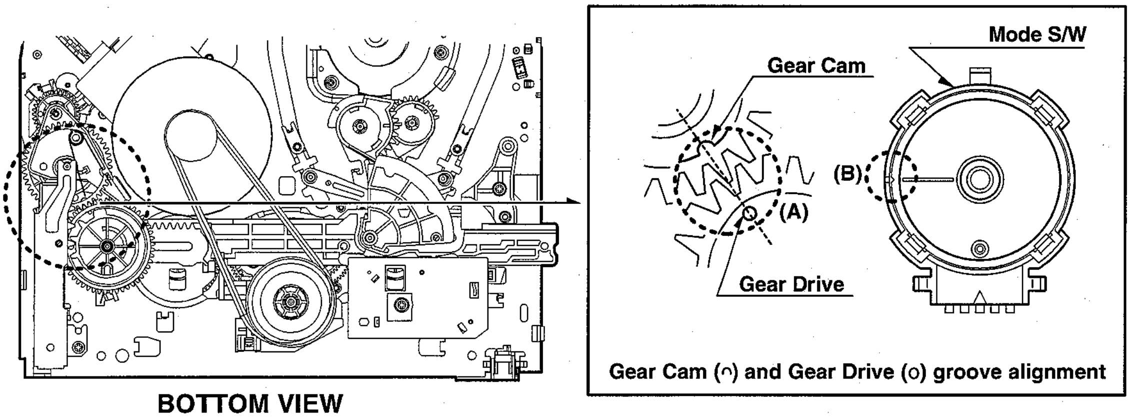
1.Mechanism Alignment Position Check

Purpose:To determine if the Mechanism is in the correct position, when a Tape is ejected.

Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Check Point
• Blank tape	• Eject Mode (with Cassette ejected)	• Mechanism and Mode Switch Position

1) Turn the Power S/W on and eject the Cassette by pressing the Eject Button.
2) Remove the Top Cover and Plate Assembly Top, visually check if the Gear Cam Hole is aligned with the Chassis Hole as below Fig. C-2.
3) IF not, rotate the Shaft of the Loading Motor to either Clockwise or Counterclockwise until the Alignment is as below Fig. C-2.
4) Remove the Screw which fixes the Deck Mechanism and Main Frame and confirm if the Gear Cam is aligned with the Gear Drive as below Fig. C-1(A).
5) Confirm if the Mode S/W on the Main P.C.Board is aligned as below Fig. C-1(B).
6) Remount the Deck Mechanism on the Main P.C.Board and check each operation.

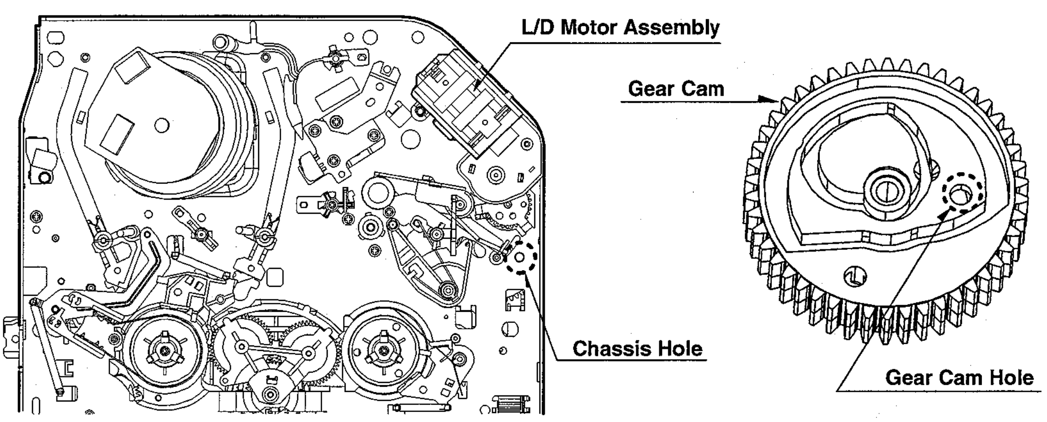
CHECK DIAGRAM



Gear Cam (∩) and Gear Drive (o) groove alignment

BOTTOM VIEW

Fig. C-1



TOP VIEW

Fig. C-2

DECK MECHANISM ADJUSTMENT

2. Preparation for Adjustment (To set the Deck Mechanism to the Loading state without inserting a Cassette Tape).

1) Unplug the Power Cord from the AC Outlet.
2) Disassemble the Top Cover and Plate Assembly Top.
3) Plug the Power Cord into the AC Outlet.
4) Turn the Power S/W on and push the Lever Stopper (L),(R) of the Holder Assembly CST to the back for Loading the Cassette without Tape.
Cover the Holes of the End Sensors at the both sides of the Bracket Side(L) and Bracket Assembly Door to prevent a light leak.
Then The Deck Mechanism drives to the Stop Mode.
In this case, The Deck Mechanism can accept inputs of each mode, however the Rewind and Review Operation can not be performed for more than a few seconds because the Take-up Reel Table is in the Stop State and can not be detected the Reel Pulses.

3. Checking Torque

Purpose: To insure smooth Transport of the Tape during each Mode of Operation.
If the Tape Transport is abnormal, then check the Torque as indicated by the chart below.

Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Checking Method
• Torque Gauge(600g/cm ATG) • Torque Gauge Adaptor • Cassette Torque Meter SRK-VHT-303	• Play (FF) or Review (REW) Mode	• Perform each Deck Mechanism Mode without inserting a Cassette Tape(Refer to above No.2 Preparation for Adjustment). • Read the Measurement of the Take-up or Supply Reels on the Cassette Torque Meter(Fig. C-3-2). • Attach the Torque Gauge Adaptor to the Torque Gauge and then read the Value of it(Fig. C-3-1).

Item	Mode	Test Equipment	Measurement Reel	Measurement Values
Fast Forward Torque	Fast Forward	Cassette Torque Gauge	Take-Up Reel	More than 400g/cm
Rewind Torque	Rewind	Cassette Torque Gauge	Supply Reel	More than 400g/cm
Play Take-Up Torque	Play	Cassette Torque Meter	Take-Up Reel	75~115g/cm
Review Torque	Review	Cassette Torque Meter	Supply Reel	130~200g/m

NOTE:

The Values are measured by using a Torque Gauge and Torque Gauge Adaptor with the Torque Gauge affixed.

• Cassette Torque Meter (SRK-VHT-303)

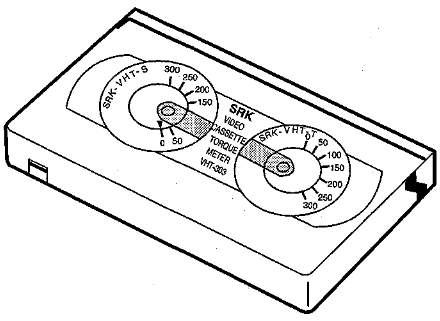


Fig. C-3-2

NOTE:

The Torque reading to measure occurs when the Tape abruptly changes direction from Fast Forward of Rewind Mode, when quick bracking is applied to both Reels.

• Torque Gauge (600g.cm ATG)

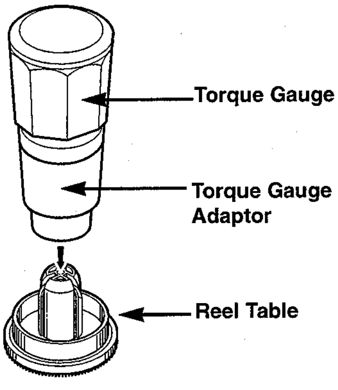


Fig. C-3-1

DECK MECHANISM ADJUSTMENT

4.Guide Roller Height Adjustment

Purpose: To regulate the Height of the Tape so that the Bottom of the Tape runs along the Tape Guide Line on the Lower Drum.

4-1. Preliminary Adjustment

Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Adjustment Point
• Post Height Adjusting Driver	• Play or Review Mode	• Guide Roller Height Adjustment screws on the Supply and Take-Up Guide Rollers.

Adjustment Procedure

1) Confirm if the Tape runs along the Tape Guide Line of the Lower Drum.
2) If the Tape runs the Bottom of the Guide Line, turn the Guide Roller Height Adjustment Screw to Clockwise direction.
3) If it runs the Top, turn to Counterclockwise direction.
4) Adjust the Height of the Guide Roller to be guided to the Guide Line of the Lower Drum from the Starting and Ending Point of the Drum.

ADJUSTMENT DIAGRAM

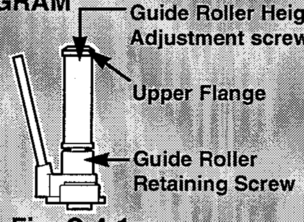

Guide Roller Height Adjustment screw
Upper Flange
Guide Roller Retaining Screw

Fig. C-4-1

4-2. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	Test Conditions VCR(VCP) State	Adjustment Point
• Oscilloscope • Alignment Tape • Post Height Adjusting Driver	• CH-1:PB RF Envelope • CH-2:NTSC: SW 30Hz PAL: SW 25Hz • Head Switching Output Point • RF Envelope Output Point	• Play an Alignment Tape	• Guide Roller Height Adjustment Screws

Adjustment Procedure

1) Play an Alignment Tape after connecting the Probe of the Oscilloscope to the RF Envelope Output Test Point and Head Switching Output Test Point.
2) Tracking Control(in PB Mode) : Center Position(When this Adjustment is performed after the Drum Assembly has been replaced, set the Tracking Control so that the RF Output is Maximum).
3) Height Adjustment Screw : Flatten the RF Waveform. (Fig. C-4-2)
4) Turn(Move) the Tracking Control(in PB Mode) Clockwise and Counterclockwise.(Fig. C-4-3)
5) Check that any Drop of RF Output is uniform at the Start and End of the Waveform.

NOTE

If the adjustment is excessive or insufficient the tape will jam or fold.

Waveform Diagrams

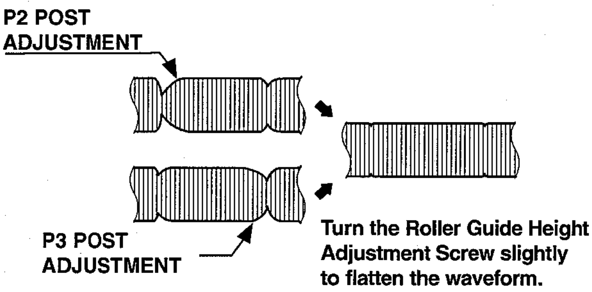

P2 POST ADJUSTMENT
P3 POST ADJUSTMENT
Turn the Roller Guide Height Adjustment Screw slightly to flatten the waveform.

Fig. C-4-2

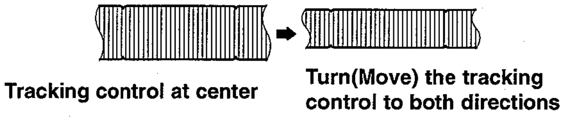
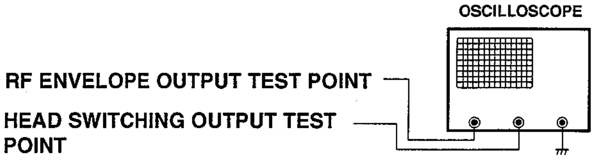

Tracking control at center
Turn(Move) the tracking control to both directions

Fig. C-4-3

Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT

DECK MECHANISM ADJUSTMENT

5. Audio/Control (A/C) Head Adjustment

Purpose: To insure that the Tape passes accurately over the Audio and Control Tracks in exact Alignment in both the Record and Playback Modes.

5-1. Preliminary Adjustment (Height and Tilt Adjustment)

Perform the Preliminary Adjustment, when there is no Audio Output Signal with the Alignment Tape.

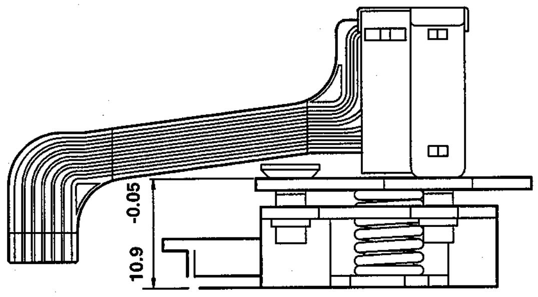
Test Equipment/ Fixture	Test Conditions (Mechanism Condition)	Adjustment Point
• Blank Tape • Screw Driver(+) Type 5mm	• Play the blank tape	• Tilt Adjustment Screw(C) • Height Adjustment Screw(B) • Azimuth Adjustment Screw(A)

Adjustment Procedure/Diagrams

1) Initially adjust the Base Assembly A/C Head as shown Fig. C-5-1 by using the Height Adjustment Screw(B).
2) Play a Blank Tape and observe if the Tape passes accurately over the A/C Head without Tape Curling or Folding.
3) If Folding or Curling is occured then adjust the Tilt Adjustment Screw(C) while the Tape is running to resemble Fig. C-5-3.
4) Reconfirm the Tape Path after Playback about 4~5 seconds.

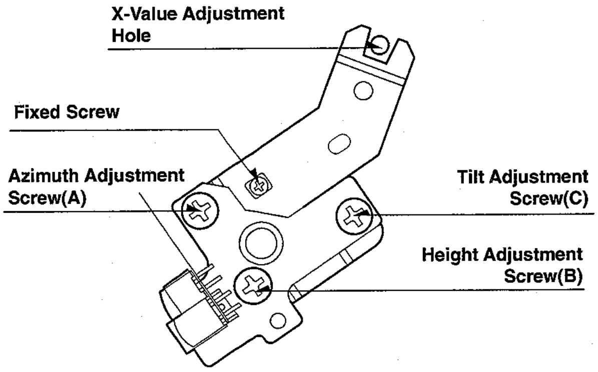
NOTE

Ideal A/C head height occurs, when the tape runs between 0.2~0.25mm above the bottom edge of the A/C head core.



A/C Head Base

Fig. C-5-1


X-Value Adjustment Hole
Fixed Screw
Azimuth Adjustment Screw(A)
Tilt Adjustment Screw(C)
Height Adjustment Screw(B)

A/C Head Assembly

Fig. C-5-2

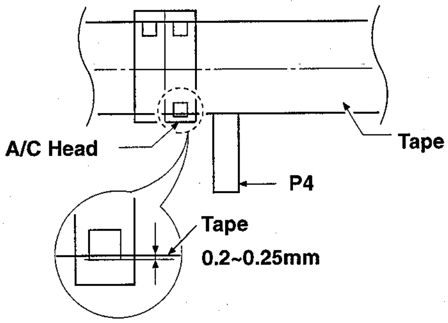

A/C Head
Tape
P4
Tape
0.2~0.25mm

Fig. C-5-3

DECK MECHANISM ADJUSTMENT

5-2. Confirm that the Tape passes smoothly between the Take-up Guide and Pinch Roller(using a Mirror or the naked eye).

1) Afetr completing Step 5-1.(Preliminary Adjustment), check that the Tape passes around the Take-up Guide and Pinch Roller without Folding or Curling at the Top or Bottom.
   (1) If Folding or Curling is observed at the Bottom of the Take-up Guide then slowly turn the Tilt Adjustment Screw(C) in the Clockwise directioin.
   (2) If Folding or Curling is observed at the Top of it then slowly turn the Tilt Adjustment Screw(C) in the Counterclockwise direction.

NOTE:

Check the RF Envelope after adjusting the A/C Head, if the RF Waveform differs from Fig. C-5-4, performs Precise Adjustment to flat the RF Waveform.

5-3. Precise Adjustment (Azimuth adjustment)

Test Equipment/ Fixture	Connection Point	Test Conditions (Mechanism Condition)	Adjustment Point
• Oscilloscope • Alignment Tape(SP) • Screw Driver(+) Type 5mm	• Audio output jack	• Play an Alignment Tape 1KHz, 7KHz Sections	• Azimuth Adjustment Screw(A) • Height Adjustment Screw(B)

Adjustment Procedure

1) Connect the Probe of the Oscilloscope to Audio Output Jack.
2) Alternately adjust the Azimuth Adjustment Screw(A) and the Tilt Adjustment Screw(C) for Maximum Output of the 1Khz and 7Khz segments, while maintaining the flattest Envelope differential between the two Frequencies.

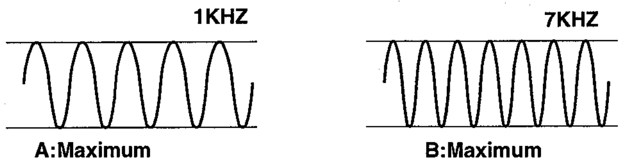
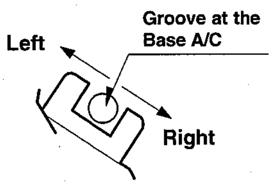

1KHZ
7KHZ
A:Maximum
B:Maximum

Fig. C-5-4

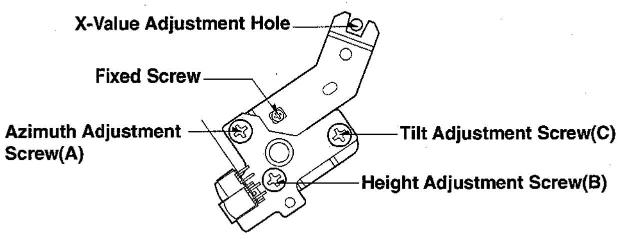
6. X-Value Adjustment

Purpose: To obtain compatibility with other VCR(VCP) Models.			
Test Equipment/ Fixture	**Connection Point**	**Test Conditions (Mechanism Condition)**	**Adjustment Point**
• Oscilloscope • Alignment tape(SP only) • Screw Driver(+) Type 5mm	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL: SW 25Hz • Head Swithching Output Test Point • RF Envelope Output Test Point	• Play an Alignment Tape	 Groove at the Base A/C Left Right

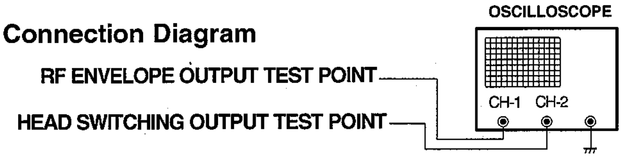
Adjustment Procedure

1) Insert the alignment tape, and press the + or - manual tracking (channel) button once while "AUTO TRACKING" is flashing on the screen to release auto tracking, and then center the tracking.
2) Run the tape long enough for tracking to complete one cycle.
3) Loosen the fixing screw, and move the A/C head base assembly in the direction shown in the diagram, to find the center of the peak so that the maximum envelope is available.
   With this method, the 31-µm head can trace on the centerof 58-µm track.
4) Tighten the A/C head base assembly fixing screw.

Adjustment Diagram


X-Value Adjustment Hole
Fixed Screw
Azimuth Adjustment Screw(A)
Tilt Adjustment Screw(C)
Height Adjustment Screw(B)

Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT
CH-1
CH-2

DECK MECHANISM ADJUSTMENT

7. Adjustment after Replacing Drum Assembly (Video Heads)

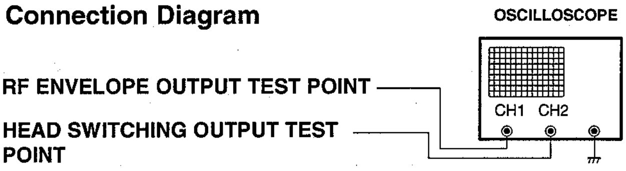
Purpose: To correct for shift in the Roller Guide and X value after replacing the Drum.

Test Equipment/ Fixture	Connection Point	Test Conditions (Mechanism Condition)	Adjustment Points
• Oscilloscope • Alignment tapes • Blank Tape • Post Height Adjusting Driver • Screw Driver(+) Type 5mm	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL: SW 25Hz • Head Swithching Output Test Point • RF Envelope Output Test Point	• Play the blank tape • Play an alignment tape	• Guide Roller Precise Adjustment • Switching Point • Tracking Preset • X-Value

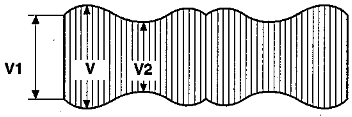
Checking/Adjustment Procedure

Play a blank tape and check for tape curling or creasing around the roller guide. If there is a problem then follow the procedure 4. "Guide Roller Height" and 5. "Audio Control(A/C) Head Adjustment".

Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT
CH1
CH2

Waveform



V1/V MAX ≦ 0.7
V2/V MAX ≦ 0.8
RF ENVELOPE OUTPUT

Fig. C-7

8. Check the Tape Travel after Reassembling Deck Assembly.

8-1.Check Audio and RF Locking Time during playback and after CUE or REV (FF/REW)

Test Equipment/ Fixture	Specification	Connection Points	Test Conditions (Mecanism Condition)
• Oscilloscope • Alignment tapes(with 6H 3kHz Color Bar Signal) • Stop Watch	• RF Locking Time: Less than 5 sec. • Audio Locking Time:Less than 10sec	• CH-1: PB RF Envelope • CH-2: Audio Output • RF Envelope Output Point • Audio Ouptut Jack	• Play an alignment tape (with 6H 3kHz Color Bar Signal)

Checking Procedure

Play an alignment tape then change the operating mode to CUE or REV and confirm if the unit meets the above listed specifications.

NOTES:

1) CUE is fast forward mode (FF)
2) REV is the rewind mode (REW)
3) Referenced to the Play mode

8-2.Check for tape curling or jamming

Test Equipment/ Fixture	Specification	Test Conditions (Mecanism Condition)
• T-160 Tape • T-120 Tape	• Be sure there is no tape jamming or curling at the begining, middle or end of the tape.	• Run the CUE, REV play mode at the beginning and the end of the tape.

Checking Procedure

1) Confirm that the tape runs smoothly around the roller guides, drum and A/C head assemblies while abruptly changing operating modes from Play to CUE or REV. This is to be checked at the begining, middle and end sections of the cassette.
2) Confirm that the tape passes over the A/C head assembly as indicated by proper audio reproduction and proper tape counter performance.

MAINTENANCE/INSPECTION PROCEDURE

1 Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.
Check with the customer to find out how often the unit is used, and then determine that the unit is ready for inspection and maintenance. Check the following parts.

Phenomenon	Inspection	Replacement
Color beats	*Dirt on full-erase head*	o
Poor S/N, no color	Dirt on video head	o
Vertical or Horizontal jitter	Dirt on video head Dirt on tape transport system	o
Low volume, Sound distorted	Dirt on Audio/control head	o
Tape does not run. Tape is slack	Dirt on pinch roller	o
In Review and Unloading (off mode), the Tape is rolled up loosely.	Clutch Ass'y S27 Torque reduced	o
	Cleaning Drum and transport system	Fig. C-9-3

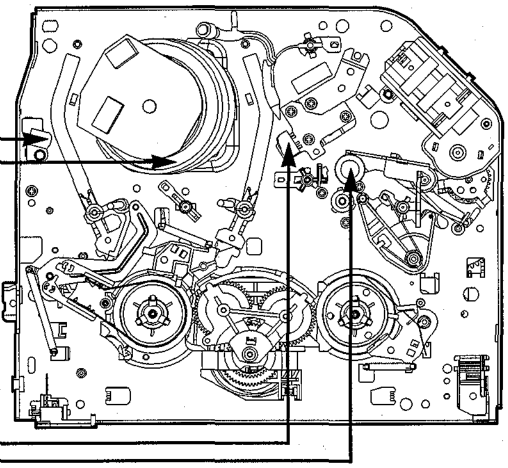

F/E Head
Video Head
A/C Head
Pinch Roller
Belt Capston
Clutch Assembly D33

Fig. C-9-1 Top VIEW

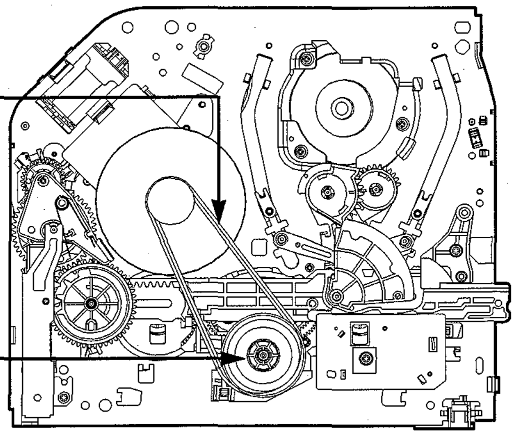


Fig. C-9-2 BOTTOM VIEW

NOTE

If locations marked with **o** do not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations See the Greasing (Page 25) for the sections to be lubricated and greased.

*** No. (1)~(13) Indicates the Tape Path to be traveled from Supply Reel to Take-up Reel.**

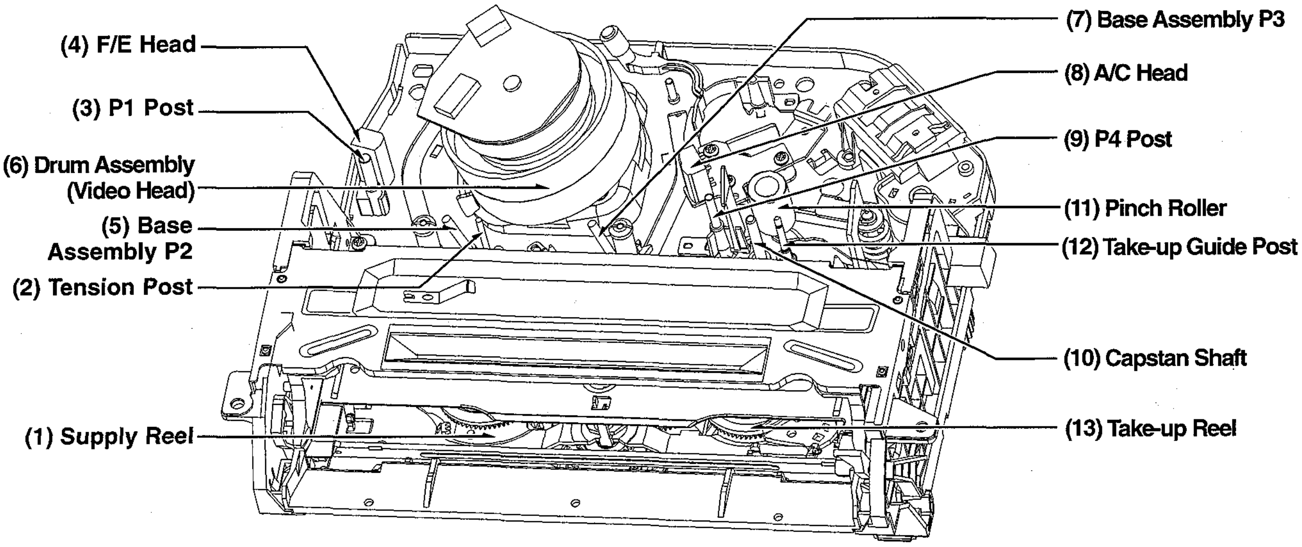

(4) F/E Head
(3) P1 Post
(6) Drum Assembly (Video Head)
(5) Base Assembly P2
(2) Tension Post
(1) Supply Reel
(7) Base Assembly P3
(8) A/C Head
(9) P4 Post
(11) Pinch Roller
(12) Take-up Guide Post
(10) Capstan Shaft
(13) Take-up Reel

Fig. C-9-3 Tape Transport System

MAINTENANCE/INSPECTION PROCEDURE

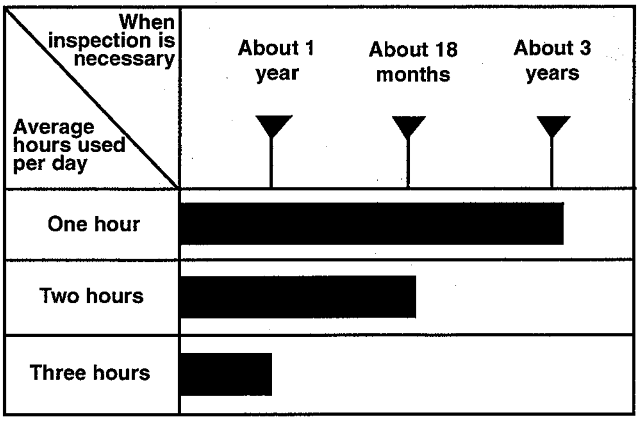
2. Required Maintenance

The recording density of a VCR(VCP) is much higher than that of an audio tape recorder. VCR(VCP) components must be very precise, at tolerances of 1/1000mm, to ensure compatiblity with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure a good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, is necessary.

3. Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR(VCP), and the environment in which the VCR(VCP) is used.
But, in general home use, a good picture will be maintained if inspection and maintenance is made every 1,000 hours. The table below shows the relation between time used and inspection period.

Table 1



4. Supplies Required for Inspection and Maintence

(1) Grease : Kanto G-311G (Blue) or equivalent
(2) Isopropyl Alcohol or equivalent
(3) Cleaning Patches
(4) Grease : Kanto G-381(Yellow) : Used only for Reel S and Reel T

5) Maintenance Procedure

5-1) Cleaning

(1) Cleaning video head
First use a cleaning tape. If the dirt on the head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with Isopropyl Alcohol. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.
(Do not move the cleaning patch vertically. Make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)
Thoroughly dry the head. Then run the test tape. If Isopropyl Alcohol remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with Isporopyl Alcohol.

NOTES:

① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which moves the tape.

② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no that force is that would cause deforming or damage applied to the system.

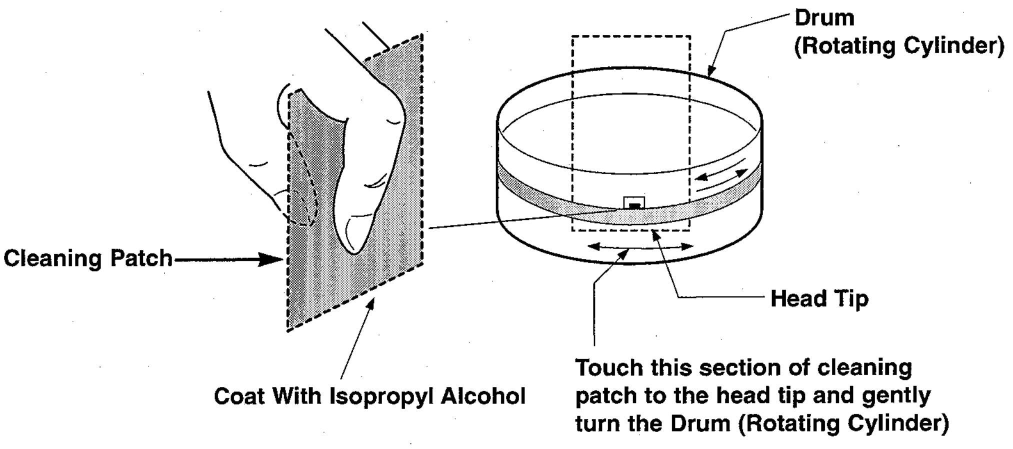

Drum
(Rotating Cylinder)
Cleaning Patch
Head Tip
Coat With Isopropyl Alcohol
Touch this section of cleaning patch to the head tip and gently turn the Drum (Rotating Cylinder)

Fig. C-9-4

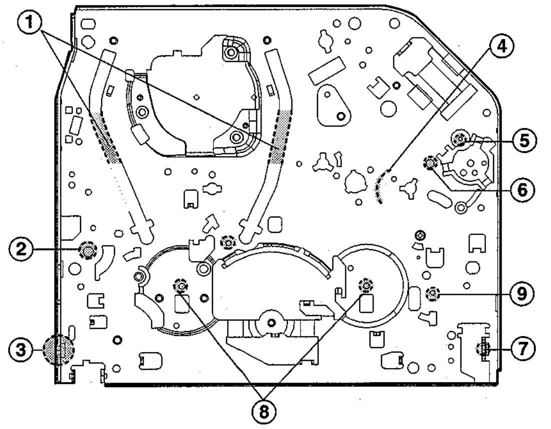
MAINTENANCE/INSPECTION PROCEDURE

5-2) Greasing

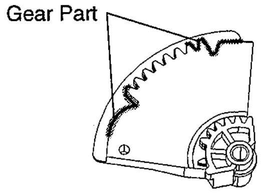
(1) Greasing guidelines
Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with cleaning patch wetted in Isopropyl Alcohol.

NOTE:Greasing Points

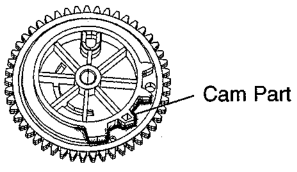
1) Loading Path Inside & Top side
2) Base Tension Boss inside Hole
3) Arm Assembly F/L "U" Groove
4) Arm Take-up Rubbing Section
5) L/D Motor Worm Wheel Part
6) Shaft
7) Arm Assembly F/L of Burning Inside Hole
8) Reel S, T Shaft (G381:Yellow)
9) Brake T Groove



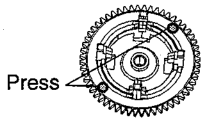
Chassis (Top)



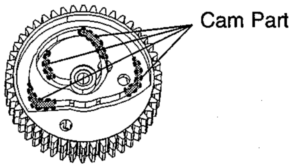
Gear Sector



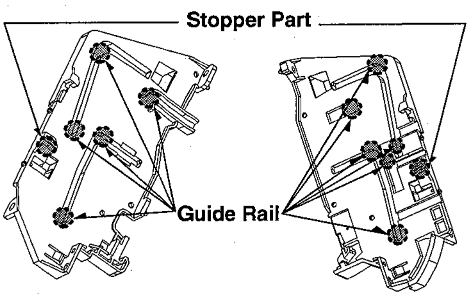
Gear Cam



Gear Assembly Up/D



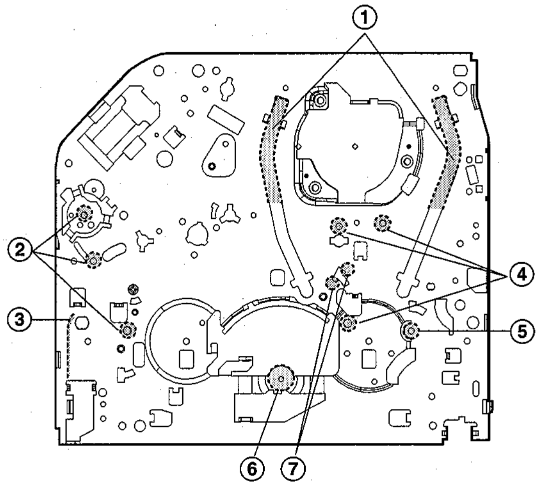
Gear Drive


Stopper Part
Guide Rail

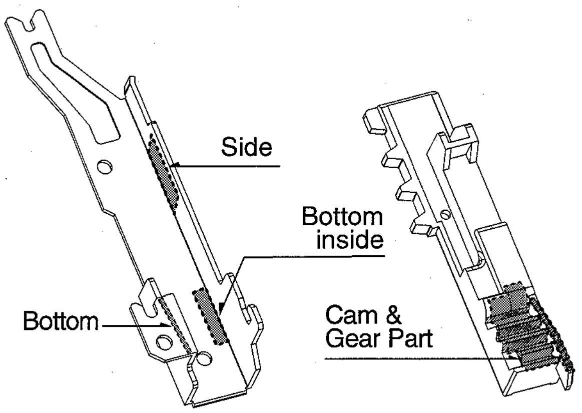
Bracket Side (L) **Bracket Assembly Door**

(2) Periodic greasing
Grease specified locations every 5,000 hours.

1) Loading Path Inside & Top side
2) Shaft
3) Gear Rack F/L Moving Section
4) Shaft
5) Lever Tension Groove
6) Clutch Assembly D33 Shaft
7) Brake "S" Rubbing Section



Chassis (Bottom)


Side
Bottom inside
Bottom
Cam & Gear Part

Guide Rack F/L **Gear Rack F/L**

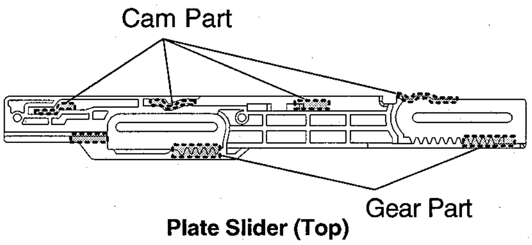

Cam Part
Gear Part

Plate Slider (Top)

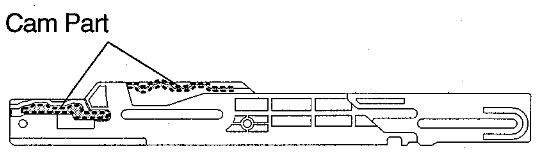
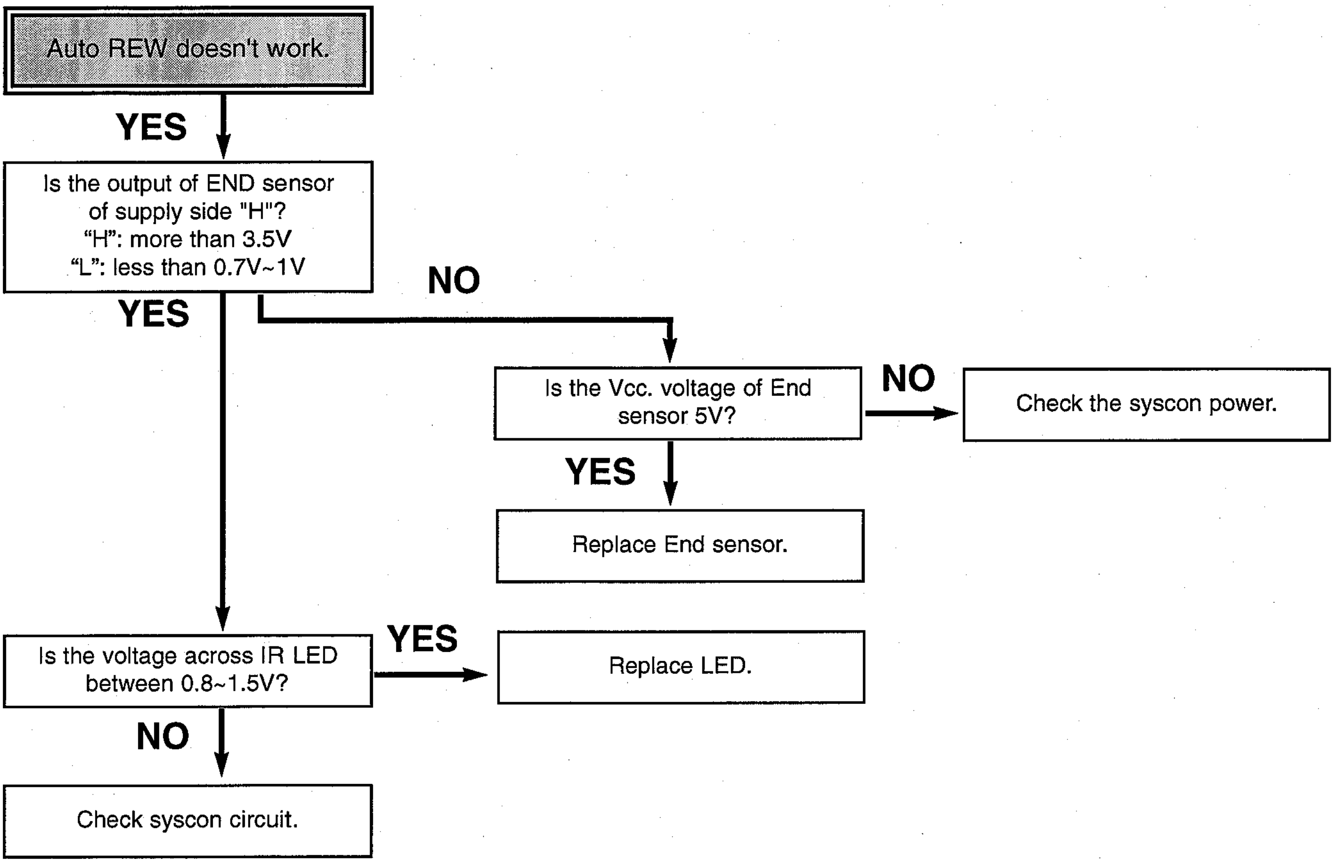


Plate Slider (Bottom)

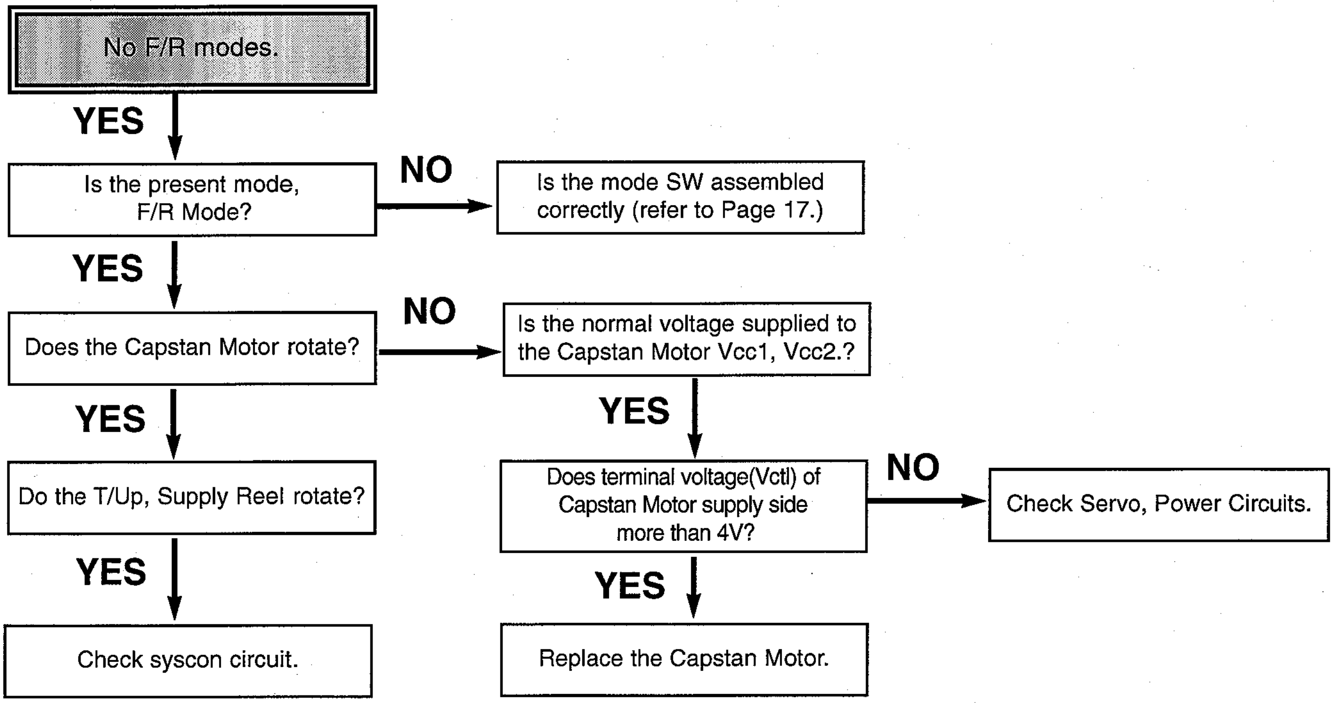
MECHANISM TROUBLESHOOTING GUIDE

1.Deck Mechanism

A.


Auto REW doesn't work.
YES
Is the output of END sensor of supply side "H"?
"H": more than 3.5V
"L": less than 0.7V~1V
YES
NO
Is the Vcc. voltage of End sensor 5V?
NO
Check the syscon power.
YES
Replace End sensor.
Is the voltage across IR LED between 0.8~1.5V?
YES
Replace LED.
NO
Check syscon circuit.

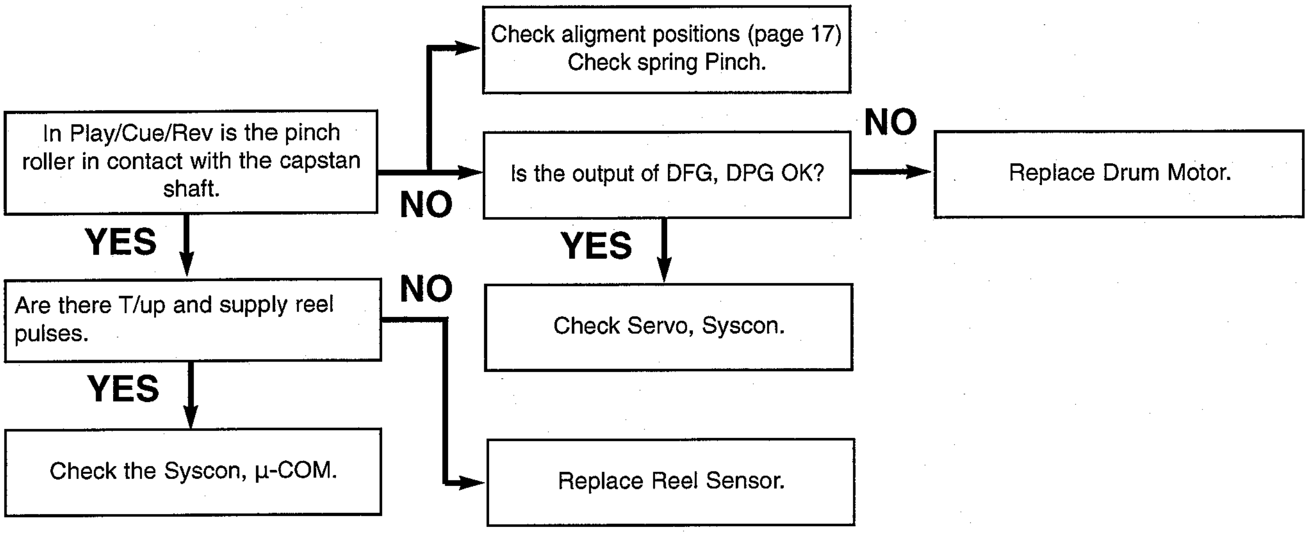
B.


No F/R modes.
YES
Is the present mode, F/R Mode?
NO
Is the mode SW assembled correctly (refer to Page 17.)
YES
Does the Capstan Motor rotate?
NO
Is the normal voltage supplied to the Capstan Motor Vcc1, Vcc2.?
YES
Do the T/Up, Supply Reel rotate?
YES
Does terminal voltage(Vctl) of Capstan Motor supply side more than 4V?
NO
Check Servo, Power Circuits.
YES
Check syscon circuit.
YES
Replace the Capstan Motor.

MECHANISM TROUBLESHOOTING GUIDE

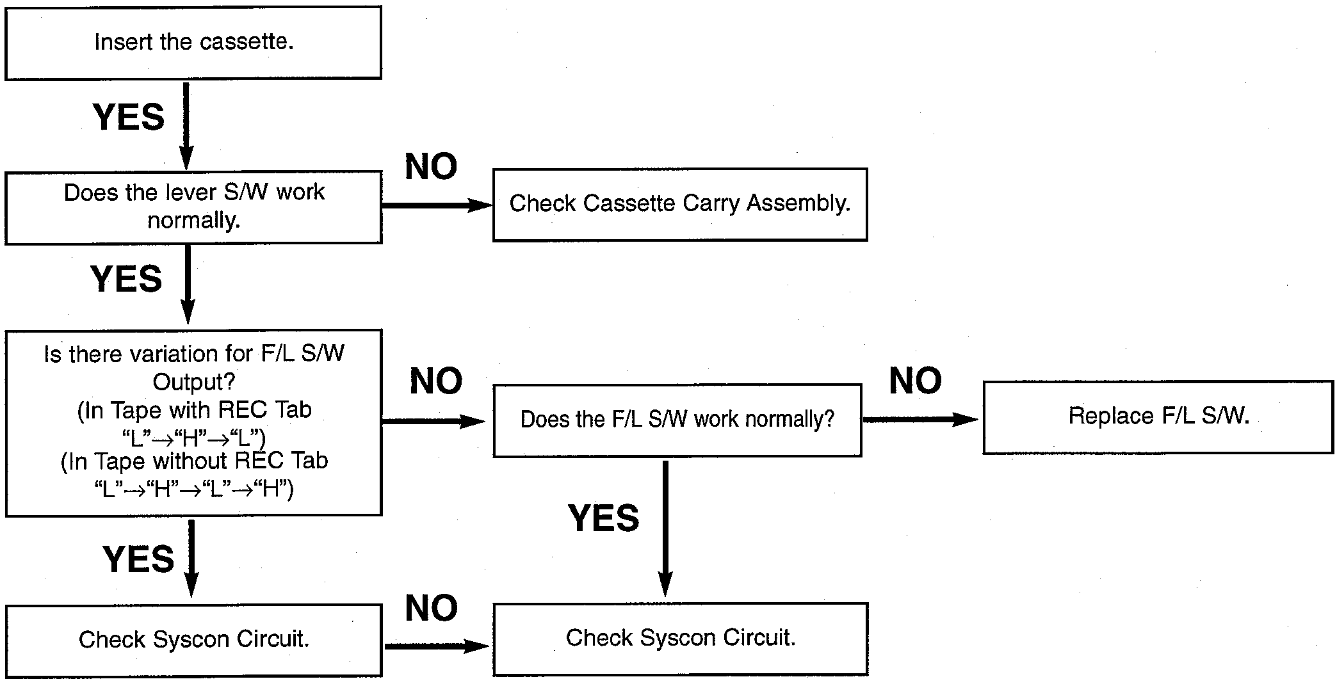
C.

AUTO STOP.
(PLAY/CUE/REV)


In Play/Cue/Rev is the pinch roller in contact with the capstan shaft.
NO
Check aligment positions (page 17)
Check spring Pinch.
Is the output of DFG, DPG OK?
NO
Replace Drum Motor.
YES
Check Servo, Syscon.
YES
Are there T/up and supply reel pulses.
NO
Replace Reel Sensor.
YES
Check the Syscon, µ-COM.

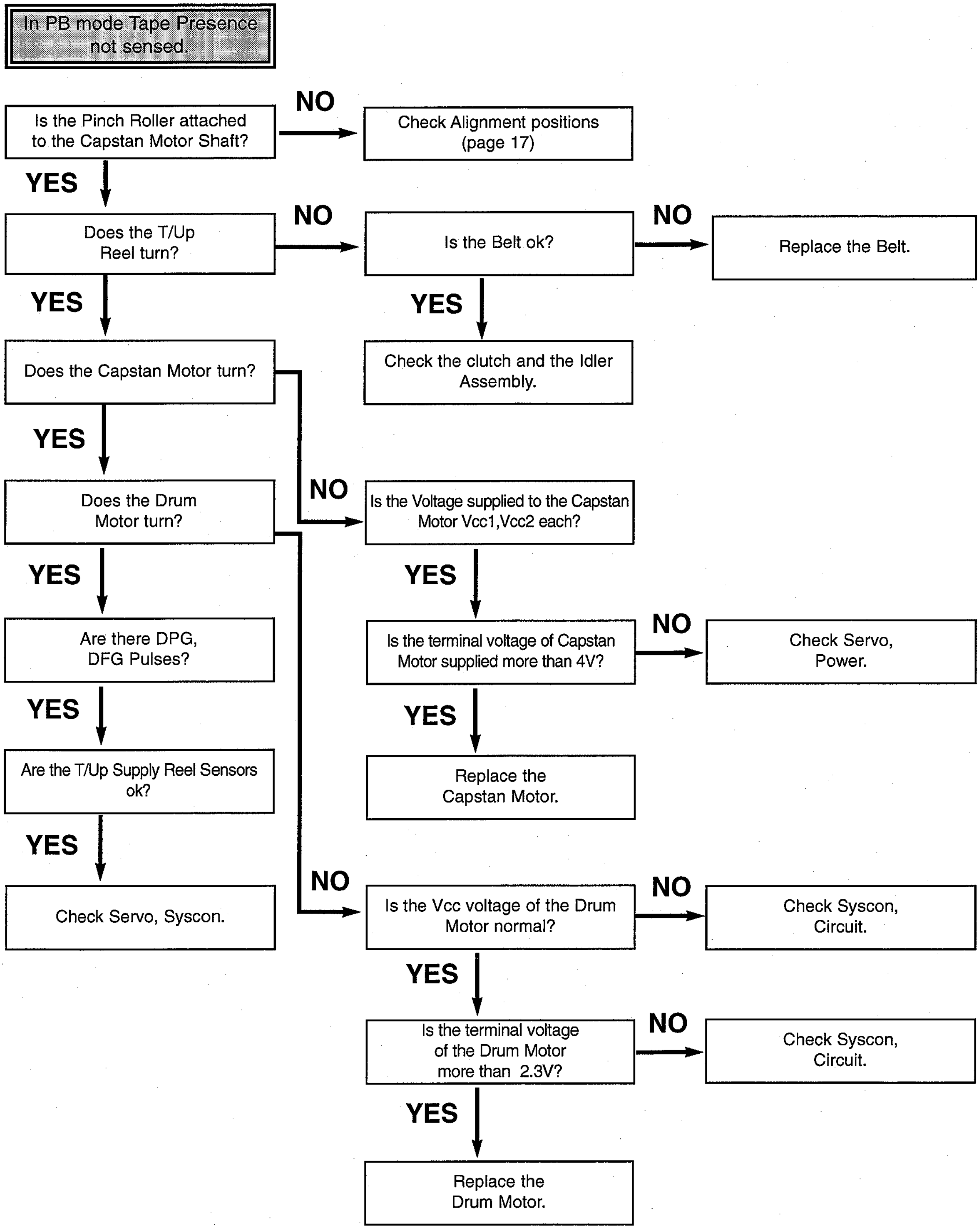
D.

No cassette loading.


Insert the cassette.
YES
Does the lever S/W work normally.
NO
Check Cassette Carry Assembly.
YES
Is there variation for F/L S/W Output?
(In Tape with REC Tab "L"→"H"→"L")
(In Tape without REC Tab "L"→"H"→"L"→"H")
NO
Does the F/L S/W work normally?
NO
Replace F/L S/W.
YES
Check Syscon Circuit.
YES
Check Syscon Circuit.
NO

MECHANISM TROUBLESHOOTING GUIDE

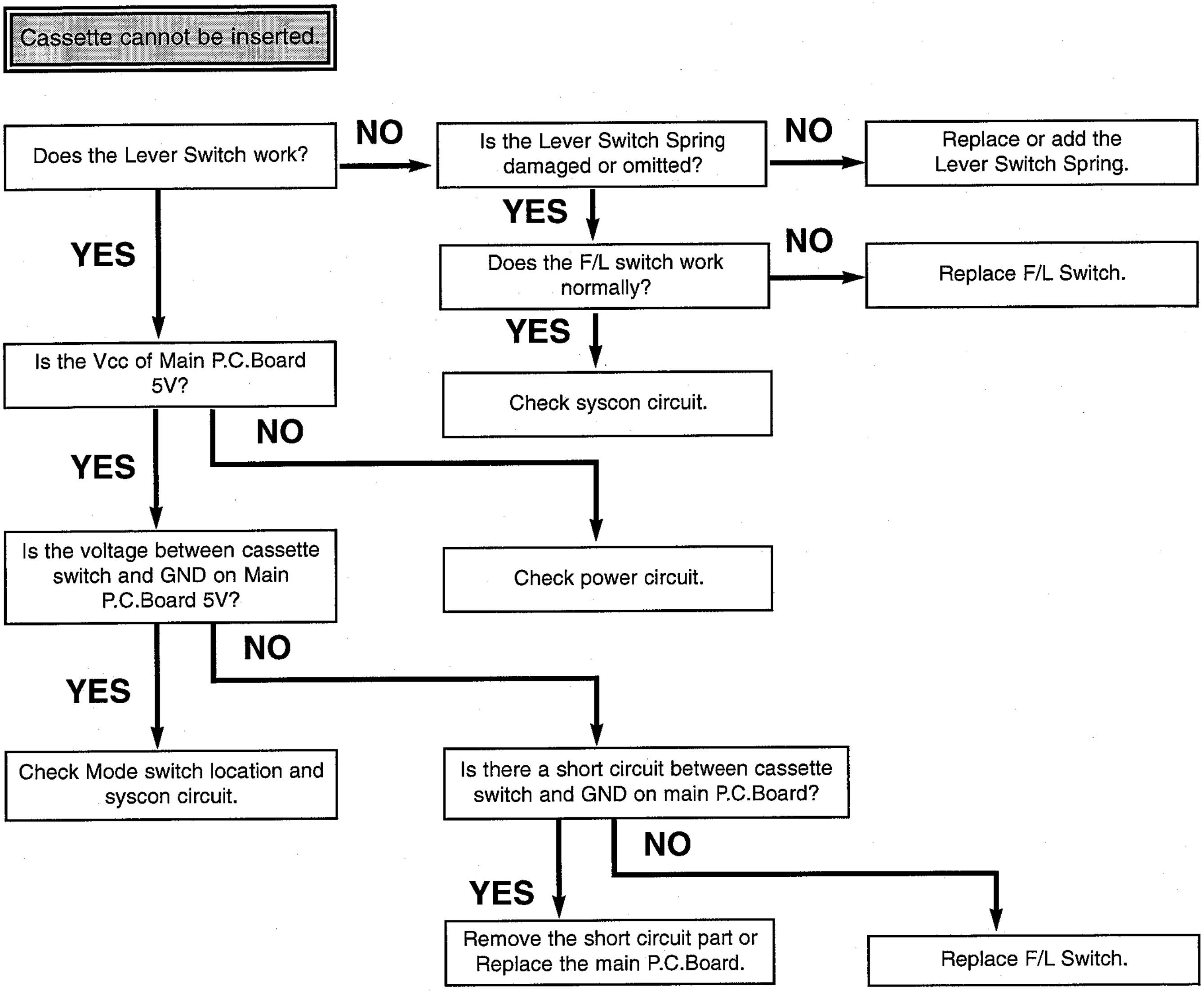
E.


In PB mode Tape Presence not sensed.
Is the Pinch Roller attached to the Capstan Motor Shaft?
NO
Check Alignment positions (page 17)
YES
Does the T/Up Reel turn?
NO
Is the Belt ok?
NO
Replace the Belt.
YES
YES
Does the Capstan Motor turn?
Check the clutch and the Idler Assembly.
YES
Does the Drum Motor turn?
NO
Is the Voltage supplied to the Capstan Motor Vcc1,Vcc2 each?
YES
YES
Are there DPG, DFG Pulses?
Is the terminal voltage of Capstan Motor supplied more than 4V?
NO
Check Servo, Power.
YES
YES
Are the T/Up Supply Reel Sensors ok?
Replace the Capstan Motor.
YES
NO
Check Servo, Syscon.
Is the Vcc voltage of the Drum Motor normal?
NO
Check Syscon, Circuit.
YES
Is the terminal voltage of the Drum Motor more than 2.3V?
NO
Check Syscon, Circuit.
YES
Replace the Drum Motor.

MECHANISM TROUBLESHOOTING GUIDE

2. Front Loading Mechanism

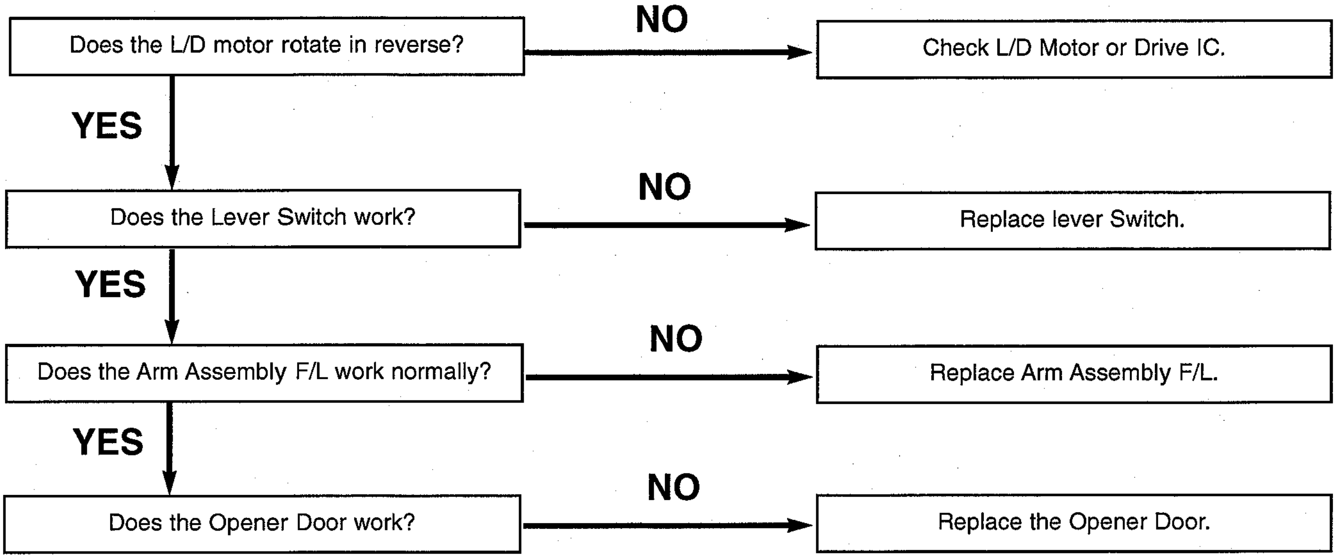
A.


Cassette cannot be inserted.
Does the Lever Switch work?
NO
Is the Lever Switch Spring damaged or omitted?
NO
Replace or add the Lever Switch Spring.
YES
Does the F/L switch work normally?
NO
Replace F/L Switch.
YES
Check syscon circuit.
YES
Is the Vcc of Main P.C.Board 5V?
NO
Check power circuit.
YES
Is the voltage between cassette switch and GND on Main P.C.Board 5V?
NO
YES
Check Mode switch location and syscon circuit.
Is there a short circuit between cassette switch and GND on main P.C.Board?
NO
YES
Remove the short circuit part or Replace the main P.C.Board.
Replace F/L Switch.

MECHANISM TROUBLESHOOTING GUIDE

B.

Cassette will not eject.



Does the L/D motor rotate in reverse?

Check L/D Motor or Drive IC.

Does the Lever Switch work?

Replace lever Switch.

Does the Arm Assembly F/L work normally?

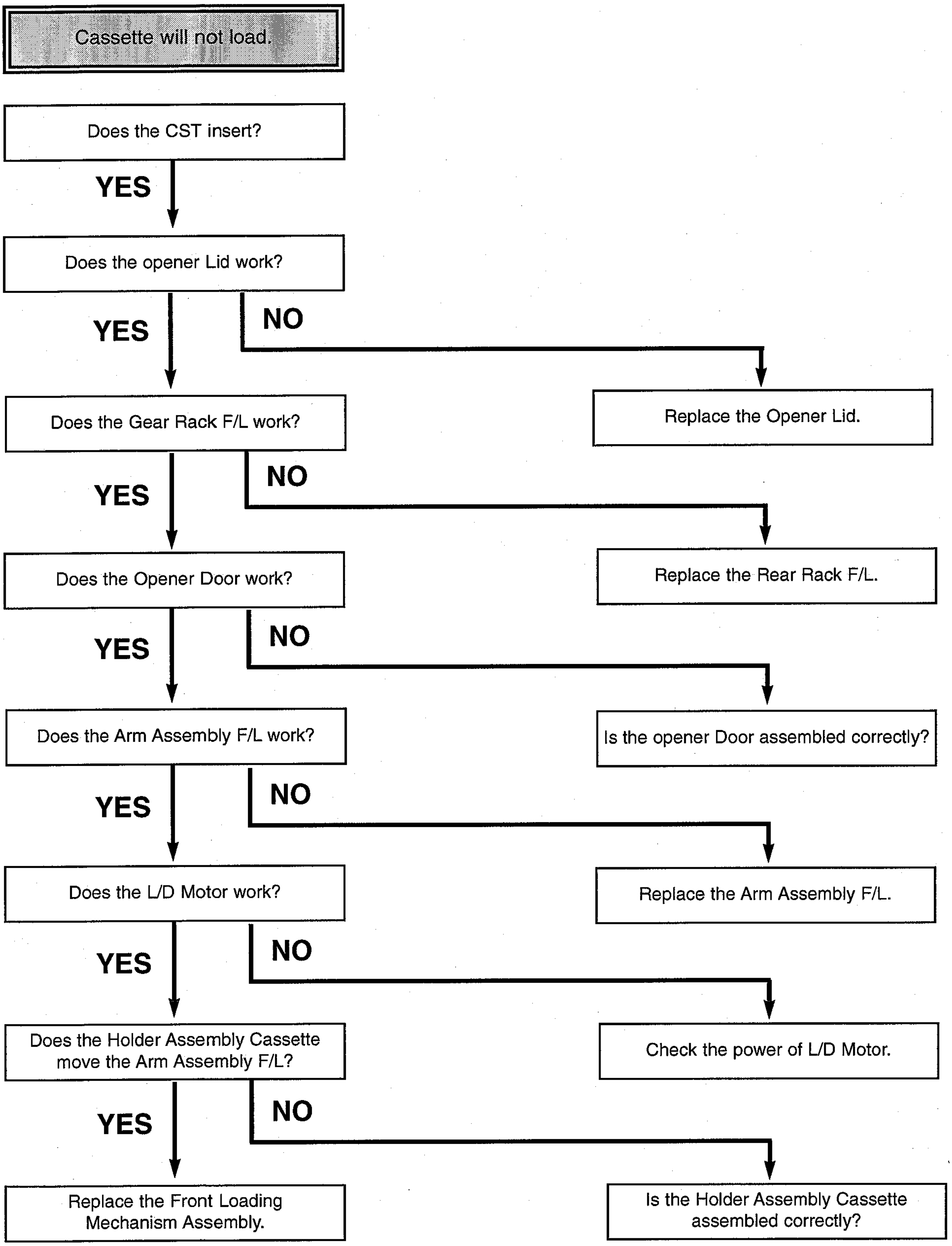
Replace Arm Assembly F/L.

Does the Opener Door work?

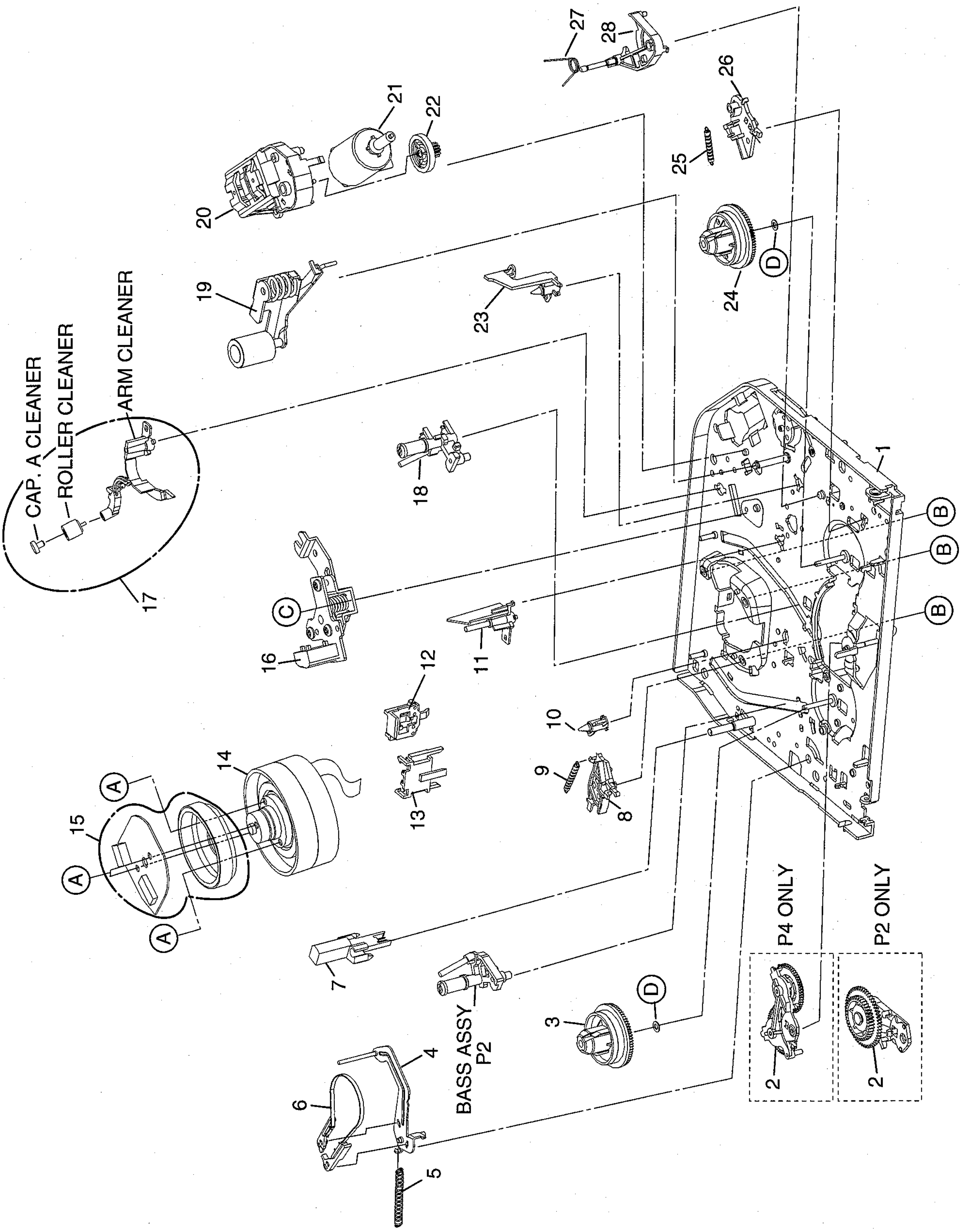
Replace the Opener Door.

MECHANISM TROUBLESHOOTING GUIDE

C.


Cassette will not load.
Does the CST insert?
YES
Does the opener Lid work?
YES
NO
Replace the Opener Lid.
Does the Gear Rack F/L work?
YES
NO
Replace the Rear Rack F/L.
Does the Opener Door work?
YES
NO
Is the opener Door assembled correctly?
Does the Arm Assembly F/L work?
YES
NO
Replace the Arm Assembly F/L.
Does the L/D Motor work?
YES
NO
Check the power of L/D Motor.
Does the Holder Assembly Cassette move the Arm Assembly F/L?
YES
NO
Replace the Front Loading Mechanism Assembly.
Is the Holder Assembly Cassette assembled correctly?

MECHANISM EXPLODED XIEW 1/3



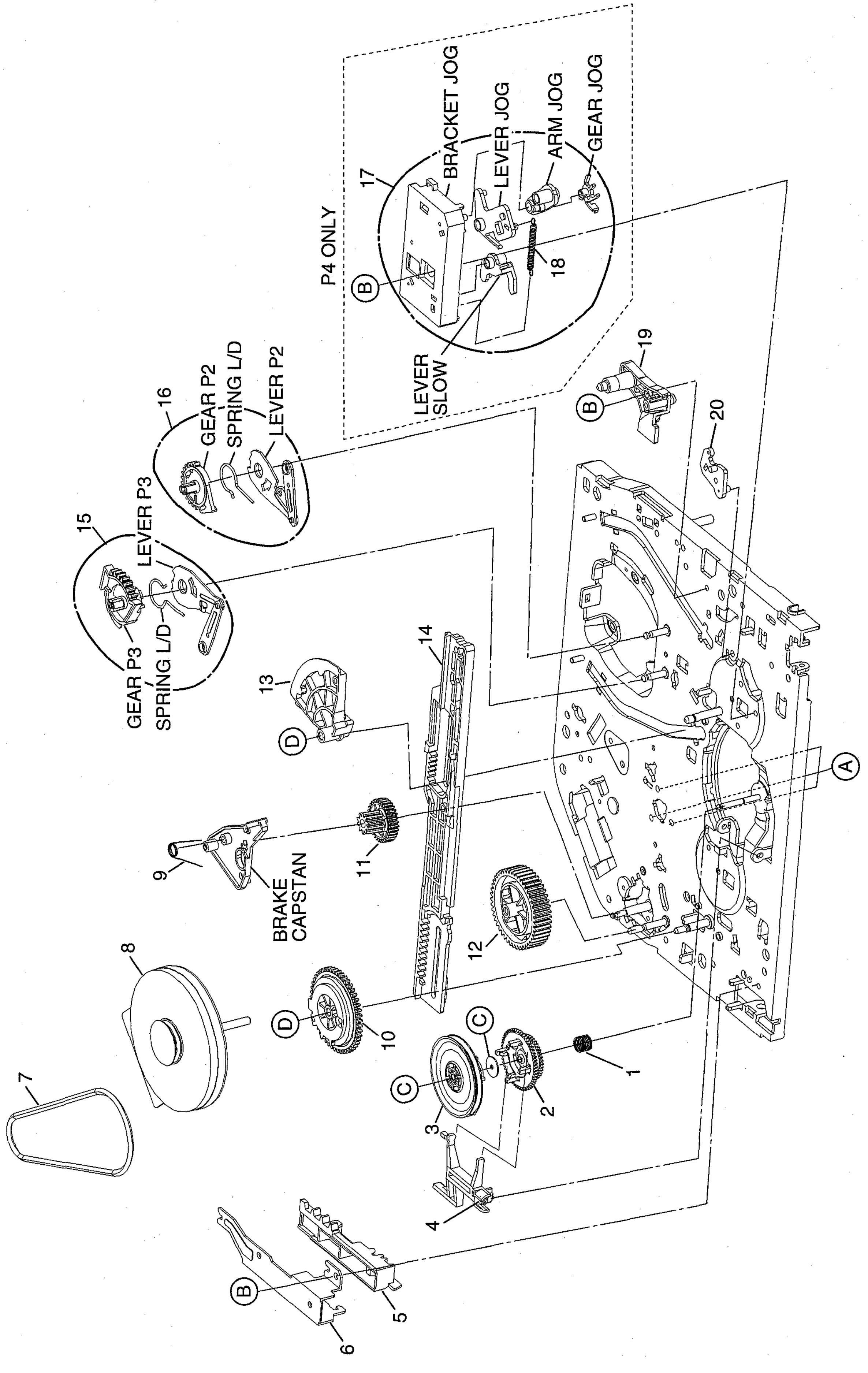
CAP. A CLEANER
ROLLER CLEANER
ARM CLEANER
17
19
20
21
22
27
28
26
25
24
D
23
18
1
B
B
B
C
16
11
12
13
10
9
8
14
15
A
A
A
A
7
BASS ASSY P2
3
D
4
6
5
P4 ONLY
2
P2 ONLY
2

MECHANISM MAIN PARTS LIST 1/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S1-41R-000-2A0		CHASSIS ASSY
2	S2-61R-000-9A0		ARM ASSY IDLER-J<P4>
2	S2-61R-000-8A0		ARM ASSY IDLER-J<P2>
3	S4-08R-000-1A0		REEL S
4	S2-61R-000-4A0		ARM ASSY TENSION
5	S9-70R-005-2A0		SPRING TENSION
6	S7-70R-000-4A0		BAND ASSY TENSION(MECH)
7	S5-238-33B-000		HEAD FE D33
8	S4-21R-000-3A0		BRAKE ASSY S
9	S9-70R-005-4A0		SPRING SB
10	S9-80R-001-0A0		SUPPORTER CST
11	S0-41R-000-7A0		BASE ASSY P4
12	S0-06R-001-4A0		CAP,FPC
13	S9-30R-010-7A0		HOLDER FPC<P4>
13	S9-30R-010-6A0		HOLDER FPC<P2>
14	S7-23R-010-1B0		DRUM ASSY SUB D33 2HD<P2>
14	S7-23R-010-2D0		DRUM ASSY SUB D33 4HD<P4>
15	S6-80R-B00-04A		MOTOR(MECH)
16	S0-41R-000-5A0		BASE ASSY A/C HEAD
17	S2-61R-000-3A0		ARM ASSY CLEANER
18	S0-41R-000-4A0		BASE ASSY P3
19	S2-61R-001-1A0		ARM ASSY PINCH
20	S8-10R-005-3A0		BRACKET L/D MOTOR
21	S6-81R-000-7A0		MOTOR ASSY L/D
22	S4-70R-002-5A0		GEAR WHEEL
23	S8-70R-000-1A0		OPENER LID
24	S4-08R-000-2A0		REEL T
25	S9-70R-005-3A0		SPRING TB
26	S4-21R-000-4A0		BRAKE ASSY T
27	S9-70R-004-3A0		SPRING T/UP
28	S2-60R-001-1A0		ARM T/UP
29	S0-41R-000-3A0		BASE ASSY P2
A	87-261-071-410		PAN HEAD SCREW 2.6-4
B	87-261-094-410		PAN HEAD SCREW 3-6
C	87-741-095-410		SCREW,PAN HEAD 3.0-8.0
D	S3-540-01B-000		WASHER,P.S 3.1-6-0.5

MECHANISM EXPLODED VIEW 2/3

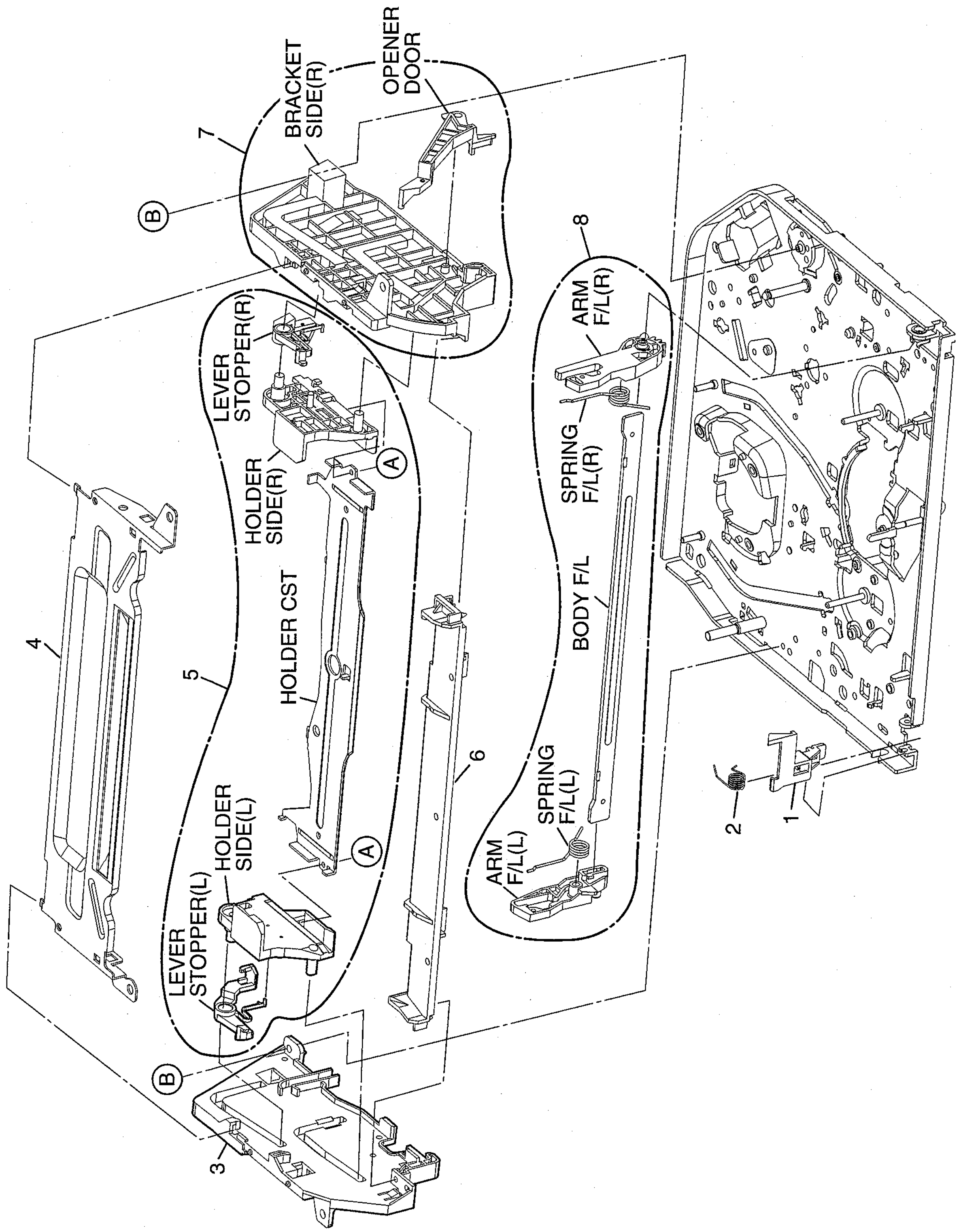

P4 ONLY
17
BRACKET JOG
LEVER JOG
ARM JOG
GEAR JOG
18
B
LEVER SLOW
19
B
20
16
GEAR P2
SPRING L/D
LEVER P2
15
LEVER P3
GEAR P3
SPRING L/D
13
D
14
A
9
BRAKE CAPSTAN
11
12
8
7
D
10
C
C
3
2
1
4
B
5
6

MECHANISM MAIN PARTS LIST 2/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S9-70R-005-1A0		SPRING UP/D
2	S4-70R-004-4A0		GEAR ASSY UP/D
3	S2-65R-000-2A0		CLUTCH ASSY
4	S5-10R-002-5A0		LEVER F/R
5	S4-70R-003-7A0		GEAR RACK F/L
6	S9-74R-001-8A0		GUIDE RACK F/L
7	S4-00R-000-5A0		BELT CAPSTAN
8	S6-80R-A00-03A		MOTOR CAPSTAN(MECH)
9	S9-70R-005-9A0		SPRING CAPSTAN
10	S4-70R-003-3A0		GEAR DRIVE
11	S4-70R-003-6B0		GEAR CONNECT
12	S4-70R-003-2A0		GEAR CAM
13	S4-70R-003-4A0		GEAR SECTOR
14	S3-00R-015-7A0		PLATE SLIDER
15	S4-70R-002-8A0		GEAR ASSY P3
16	S4-70R-002-6A0		GEAR ASSY P2
17	S8-11R-001-2A0		BRACKET ASSY JOG<P4>
18	S9-70R-004-9A0		SPRING JOG<P4>
19	S0-40R-001-8A0		BASE TENSION
20	S5-10R-002-2A0		LEVER TENSION
A	SA-PF0-262-218		SCREW,PAN HEAD 2.6-6.8
B	87-261-094-410		PAN HEAD SCREW 3-6
C	SW-ZZR-000-4B0		WASHER STOPPER
D	SW-ZZR-000-4A0		WASHER STOPPER

MECHANISM EXPLODED VIEW 3/3



OPENER DOOR
BRACKET SIDE(R)
7
B
LEVER STOPPER(R)
HOLDER SIDE(R)
A
HOLDER CST
5
4
HOLDER SIDE(L)
A
LEVER STOPPER(L)
B
3
6
8
ARM F/L(R)
SPRING F/L(R)
BODY F/L
SPRING F/L(L)
ARM F/L(L)
2
1

MECHANISM MAIN PARTS LIST 3/3

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S5-10R-002-0A0		LEVER SWITCH
2	S9-70R-005-0A0		SPRING SWITCH
3	S8-10R-005-6A0		BRACKET SIDE(L)
4	S3-01R-002-9A0		PLATE ASSY TOP
5	S9-31R-001-5A0		HOLDER ASSY CST
6	S9-74R-001-9A0		GUIDE CST
7	S8-11R-001-4A0		BRACKET ASSY DOOR
8	S2-61R-001-0A0		ARM ASSY F/L
A	87-841-034-210		SCREW PAN HEAD 2.0-5.0
B	87-261-094-410		PAN HEAD SCREW 3-6